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ABSTRACT

This 2-year project attempted to improve local employment prospects of young adult Inuit in seven communities in the Keewatin Region in the Canadian Northwest Territories by providing them computer-assisted instruction (CAI) in adult basic education and high school equivalency upgrading programs; business, financial, and telecommunications software applications; and advanced topics such as higher math, physics, and chemistry. The programs operated at the level and pace of each learner. Data were gathered using a variety of qualitative and quantitative methods in order to address the five anticipated results of the project. The anticipated results of the project and whether they were achieved were as follows: (1) the training did attract and maintain the interest of a greater segment of the target population, as evidenced by enrollment increases in all programs, including typically low-prestige compensatory education programs upon which the computer technology seemed to confer prestige; (2) the training did not produce faster progress in academic training in that there were no differences between the Tests of Adult Basic Education scores of the computer-assisted students and those of Inuit students in other regions who did not have access to CAI; (3) the training did provide job readiness skills, including improved reading and speaking skills, greater awareness of and realism regarding their goals, skill at using software applications programs, and greater writing ability; (4) the training did increase students' chances of obtaining employment, with 46 percent of graduates employed 6 months after the course ended and the most common reason given for unemployment being the pursuit of more training; and (5) the training did develop an effective new educational model for the North, of which computers will be part. (The document contains copies of instruments and 24 tables.) (CML)

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FINAL REPORT:

Keewatin Region Educational Authority

Pilot Adult Education Project: Computer-Assisted Learning

July, 1989

Patrick J. Fahy, Ph.D.

Director, Research and Development

Alberta Vocational Centre, Edmonton

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(This is the final report of a two-year project jointly funded by CEIC Innovations and Advanced Education, GNWT.)

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Final Report

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EXECUTIVE SUMMARY

The Project

This report summarizes activities and outcomes of a 2-year project, funded jointly by Canada Employment and Immigration Innovations and Advanced Education, Government of the Northwest Territories, in the Keewatin region, Northwest Territories, from August, 1987, to June, 1989.

The project was a pilot innovation in the education of young adult Inuit in the seven communities in the Keewatin Region. The use of Control Data PLATO hardware and software in adult basic education and high school equivalency upgrading programs comprised the main thrust; a secondary but important additional use of the MS-DOS compatible hardware was in training of students in business, financial and telecommunications software applications, and in advanced topics such as higher math, physics and chemistry (termed "specialized" usage in this project).

The main goal of the project was to address the training needs of young adult northerners and, thereby, to lessen unemployment in the region. The two major objectives were: 1) to provide programming at the level and pace of each individual learner, and 2) to provide special training and skill enhancement in these remote Arctic communities to improve local employment prospects.

Data were gathered using a variety of qualitative and quantitative methods in order to address the five "anticipated results" of the project. Each of these anticipated results, and the principal associated findings, is described below.

Anticipated result 1: Attracting and maintaining the interest of a greater segment of the target population.

As compared with the Kitikmeot region, the Keewatin region attracted somewhat older students, who were also more likely to be married and to have dependents, and who had more previous work experience and more previous education than their peers.

The adult educators and the project managers noted that CAL and the presence of the computer technology had resulted in a greatly enhanced image for the Adult Education Centres, and for programs offered through them. Even low-level academic upgrading, which had traditionally been a low status offering, benefitted from the prestige conveyed by the technology. As a result, enquiries, applications and enrollments in all programs increased, sometimes dramatically: in some communities the greater numbers were in daytime programs, in others they were in part-time evening offerings; some of the newly attracted were employed persons seeking new skills, while others were from among the "walkabouts", chronically unemployed and unengaged persons who were not previously attracted to training. This image-enhancement, and the effect on student numbers and community awareness and interest, were regarded as evidence of achievement of this anticipated result.

Anticipated result 2: producing faster progress in academic training.

Tests of Adult Basic Education (TABE) results showed no difference in grade level increases for CAL participants in the Keewatin region, as compared with students in the Kitikmeot and Inuvik regions who did not have access to CAL.

On the basis of the TABE data, the conclusion was reached that this anticipated result was not achieved.

Anticipated result 3: providing job readiness skills.

The adult educators reported several effects of CAL on students' skill acquisition, including improved reading and speaking abilities, greater awareness and realism regarding their goals, and greater writing abilities. Students completing their programs were surveyed at course-end; they reported they were using, or expected to use, their newly acquired skills in employment, that they felt well prepared for employment, and that they felt prepared to succeed in other things besides work. Employers in the communities at large perceived graduates as employable, as indicated by requests to the Adult Education Centres for referrals of computer literate graduates looking for work. Students who trained on the various business packages available on the systems (Wordperfect, Lotus 1-2-3, D-Base, etc.) acquired directly applicable job skills.

On the basis of the large numbers of students who undertook specialized training, and the attitudes of those in upgrading programs regarding employment, this anticipated result was regarded as achieved.

Anticipated result 4: increasing chances of obtaining employment or improving level of employment.

Despite evidence that some graduates might have unrealistic expectations of their employability in their home communities, follow-up six months after course completion showed an employment rate of 46%. Among unemployed graduates the most common reason was pursuit of further training. In addition, 96% of graduates reported they expected to take further training, usually three months or more in the future.

At graduation, trades and business were the most popular choices for future training. The six-month follow-up showed that 41% of jobs actually held by employed graduates were in mechanics or carpentry, while only one graduate had obtained employment as a secretary. The average wage of employed persons was $1762 per month, approximately $230 higher than projected by the graduates at course-end.

Overall, there was consistent evidence of the orientation of graduates towards employment, and of development on their part of skills and attitudes which would directly affect their employability. The significance of the 46% employment rate actually obtained by graduates was judged problematic, in the absence of data from a comparable control group.

This anticipated result was regarded as achieved, especially for those graduates who had pursued trades-related goals. In general, students who graduated held attitudes and orientations which boded very well for their future employability.

Anticipated result 5: developing an effective new educational model for the North.

The principal finding of the study in regard to this question was that CAL and computer technology are clearly a part of a new model for adult education in the North. In those communities where the adult educator was enthusiastic and employed the technology capably, the Adult Education Centre became more vibrant and respected. In those Centres students at all levels repeatedly testified that learning - and the learning experience - was enjoyable, swift and rewarding. There were cases, however, where CAL and the technology represented by the computer systems was employed much less effectively. Implementation problems and technical failures may have played a part, but it became clear that the more important factor was the attitude of the adult educator: those who expected the innovation to be unsuccessful found genuine evidence that it was, while those who communicated to their students the expectation that the technology would play a positive role found that it did so.

The actual contribution of CAL to adult learning in these communities consisted of the following:

1. A new image for adult education in the communities, and for the Adult Education Centres generally. Whereas the Centres may formally have been viewed as providing a refuge for largely unmotivated and incapable young adults, the presence of the computers was credited with changing the image to one of a training facility capable of providing a range of desirable and current courses in a modern adult mode. (The positive results of the Inuktitut language development project, though still preliminary, provided more evidence of the potential of this system to meet cultural expectations.) This new image attracted a new clientele: often employed, older, and already well educated, these comprised a positive role model for the coterie of younger drop-outs and "walkabouts". Program managers, Arctic College administrators, and the adult educators themselves cited this image change as one of the most significant and important contributions of the project.

2. Greater student motivation, including the ability to attract and retain a wider range of potential students. Once attracted, motivation was enhanced by the wider range of course offerings and specialized skill training packages.

3. Greater persistence of students in courses and fewer terminations due to the effects of irregular attendance, student/instructor personality clashes, unsuitable pace of instruction (either too fast or too slow), and problems related to the status or image of the program.

4. A new role for the adult educators, more as guides and motivators and less as information purveyors. Also, more duties related to promotion and communications about the wide range of programs available and the technology itself. (Some adult educators found this new role exhilarating while others resented the change it meant to their typical duties and former role.)

5. Greater responsibility placed upon the students themselves, to use their time on the computer responsibly, to seek help as needed, to review, and to use non-computer based resources to supplement CAL. (While most students regarded these as advantages,

> some students resented the change and harkened back to the days of their previous dependency on the instructor, in the pattern of their earlier education.)

This last anticipated result was regarded as achieved, to the degree that the computer systems and CAL were viable and did achieve increases in interest and accomplishment in the participating regions. The exact nature of the interaction between the technology and other learning resources, and among the technology, the personnel, the communities, and the learners themselves remains to be worked out. The positive responses of the students and staff to the technology, and the promise shown by the outcomes of the project itself, resulted in the conclusion that further efforts to perfect the system should be expended.

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Final Report

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PART 1: INTRODUCTION AND BACKGROUND

The project

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Adult education in the Keewatin Region

In the Keewatin Region some form of adult education has existed for more than fifty years, beginning at the Catholic missions where adults were taught to read the Bible. Informal adult education has also been offered by other agencies such as the housing corporation. The Department of Education, GNWT, established the first Adult Education Centres in the region in three communities in the late 1970s. It is only since the beginning of this project (1987) that an Adult Education Centre has existed in each of the seven communities in the region.

The original role of the Adult Education Centres in these communities was to make academic upgrading and general interest courses, as well as career counselling, available to residents of the communities. The Centres kept a fairly low profile, a role which is now changing rapidly as the communities begin to demand more structured approaches to instruction, and as the numbers of students increases. This change is stimulated by the growth of the wage economy, requiring workers to have at least a basic education in order to acquire and keep a job.

The character of the communities is changing as well, moving from a traditional land-based economy to one more wage-based, and demanding different marketable skills for entry-level employment. Students who formerly saw little value in education now realize that at least functional literacy in English is required for employment. They have also found that specific training for some jobs and employment in those areas requires competence in English. (The rate of functional illiteracy in English in the Northwest Territories is about 77%.)

Two barriers were identified as part of the needs analysis conducted for this study. First, it became necessary to examine inherent problems in serving the target population. One of the reasons this population was not previously reached was that it was located in small communities, and in numbers not large enough to support a complete education centre providing a variety of specialized training. Centralized programs were also not feasible because of the resistance of students to leaving their home communities. The question arose as to how to provide a broader base of training to isolated populations in an cost-effective manner.

A second perceived barrier was the format of the instruction itself. Specifically, the needs of the target population were not met by traditional instruction. An innovative and truly adult form of academic upgrading and skill training was required to meet the needs of these adult learners.

The Keewatin Region is made up of seven communities ranging in size from approximately 180 (Whale Cove) to over 1400 (Rankin Inlet). The Inuit population of these communities ranges from 77% in Rankin Inlet to 99% in Chesterfield Inlet. These communities are geographically isolated in that they can only be reached by air most of the year, and for a short period in the summer by boat.

The first language of the natives of the region is Inuktitut, of which there are many dialects. As noted above, the functional literacy level in English is reached only by approximately 23% of the population.

Each community's Adult Education Centre has a mandate to provide academic upgrading to a grade 10 level for adults. The Centres are housed in various types of accommodation and locations, typically in school portables or older refurbished buildings. All of the Centres offer academic upgrading on a full-time basis, and other part-time programs either during the evening or day. In addition to these courses the Centres offer a variety of other courses including business, computer applications, Inuktitut, traditional land skills and general interest courses such as firearm safety or photography.

Clientele for the Centres are the unemployed, but participants in the upgrading courses also include apprentices, inservice trainees and employees on work-release programs. As will be discussed below, the major part of the rationale for this project was the need to address the region's high unemployment rates, and the need to enhance employed persons' skills through locally available training.

Project goal and objectives

The overall goal of the project was stated in the Program Proposal as follows:

1. The main objective of this project is to conduct a pilot program which will include computer-assisted training. The project is designed to address the training needs of young native northerners and the underlying problems of their high unemployment rates and lack of suitable qualifications. Including computer-assisted training in adult programs will permit:

    a. Individuals who have not been successful in traditional education programs to work independently at their own level and to receive regular constructive feedback; and

    b. Individuals requiring specialized training to get it in their community, improving their chances of obtaining employment or improving their employment or trainability.

These goals were further elaborated in schedule A of the Proposal as follows ("anticipated results"):

a. Attracting and maintaining interest of a greater segment of the target population in education programs.

b. Producing faster progress in academic training.

c. Providing job readiness skills.

d. Increasing chances of getting employment or improving level of employment.

e. Creation of a new, more effective educational model for Inuit students that may be used throughout the Arctic.

Chronology of the project

The project was viewed as an opportunity to determine whether other modes of instruction besides traditional teaching methodologies would be appropriate and successful with the target population vis-a-vis the above objectives. The Innovations program of CEIC approved funding for the project in the amount of $1,285,000 over two years. This amount included funding for computer hardware, furniture, software, educational courseware, software development for Inuktitut instruction, instructor support, administrative support, and evaluation. The Department of Education, GNWT, in the Keewatin region agreed to provide an equivalent dollar amount over the same two-year period in the form of person years and related costs (i.e. the time of adult educators, project coordinator, project manager and support staff, and travel costs). They also provided facilities, and program operation and maintenance costs.

The project commenced on May 15, 1987, with an initial meeting of adult educators in Rankin Inlet. This initial meeting was followed by another conference of the adult educators in August, 1987, at which time the evaluation plan developed by the External Evaluator was presented. A mid-term meeting of the adult educators was held in January, 1988, and in February a tour of the regions by charter was arranged for the Project Manager, the Project Coordinator, the External Evaluator, and a representative of Control Data Canada. The first year concluded with a conference of adult educators in April, 1988.

In September, 1988, the initial adult educators' conference of the second year of the project was held. At this time the evaluation plan for the first year was revised and some of the instruments underwent revision. There was no staff turnover between the first and second year; consequently, the need for staff training in the first part of the second year was minimal. The mid-term conference in January, 1989, was also the occasion for an upgrade of the hardware and software, designed to provide more capability in the hardware and to repair some shortcomings in the original software release. In April the final conference of adult educators was held in Rankin Inlet, at which time individuals were interviewed singly and in groups, those involved in management of the project were debriefed, and the final data-gathering activities were conducted. At this time outside stakeholders were also interviewed.

Methodology

This study was intended to provide both qualitative and quantitative measures of the impact of computer-assisted learning (CAL), and the presence of sophisticated computer resources in these remote communities. Therefore, a variety of instruments and procedures was used, as described below (Figure D):

Figure D: Methodology and instruments for the project

Objective	Methodology/Instrument	Attachment
A	Monthly attendance reports	E
	Student information data (demographics)	C
	Instructor interviews	
	Comparative information, Keewatin, Kitikmeot and Inuvik regions	
	Former student information (Year 1 only)	K
B	TABE results	D
	Student interviews (group and individual)	
	Instructor interviews (group and individual)	
C	Employability Assessment Questionnaire	I
	Course-end Questionnaire	J
	Stakeholder interviews	
D	Six month follow-up	
	Student interviews (group and individuals)	
	Stakeholder interviews	
E	Learning Readiness Scale (Year 1 only)*	H
	Computer Adaptation Scale (Year 1 only)*	B
	Instructor Computer Adaptation Scale	
	Student interviews (group and individual)	
	Instructor interviews (group and individual)	
	Stakeholder interviews	
	Instructor logs (Year 1 only)	F
	Student logs (Year 1 only)	G

*Coral Harbour also used these instruments in year 2; see text.

(The attachments contain copies of the quantitative instruments used. These were limited (except as noted below) to year one of the project because of the high levels of consensus observed, and because of the heavy data-gathering demands being imposed upon the participants in year two.)

Structured interviews, both individual and group, and staff and student logs comprised the qualitative measurement activities. Interviews were conducted with present and past students, staff, project managers, and members of various educational stakeholder groups. Interviews were conducted in Rankin Inlet on the occasion of the adult educators' conferences, and in each of the other six communities during the February, 1988, charter of the region by the External Evaluator and other members of the project team.

Student and staff logs were kept in year one and were submitted to content analysis by the Evaluator. The process identified principle themes, and particularly cogent statements were excerpted for review and comment by project staff during the interviews. These were also included at various points in the report for illustration.

In an attempt to provide comparative information, control groups for some purposes (principally TABE results and certain student information variables) were identified. In year one and two, the Kitikmeot region provided student information and TABE data; in year two the Inuvik region also did so. These data are presented from time to time in this report to aid in assessing the significance of data reported for the (experimental) Keewatin region.

Organization of this report

This report contains: 1) findings related to each of the anticipated results, 2) conclusions, where appropriate; 3) supplementary tables, and 4) attachments (the data-gathering instruments and supplemental tables of results).

PART 2: FINDINGS

Introduction

In the following, data collected from project participants in the Keewatin region will be presented and discussed in relation to the five anticipated results. In addition, data collected from control groups in the Kitikmeot (year one and year two) and Inuvik (year two only) regions will be presented to provide comparative results for students who did not have extensive access to CAL.

Anticipated Result 1: Attracting and maintaining the interest of a greater segment of the target population.

Demographic characteristics of students

Tables 1.1 (Attachment T, page T1.1) and 1.2 (Attachment T, page T1.2) show demographic characteristics of Keewatin region program participants. (See also Attachment C, page C-1).

The following observations are based on Table 1.1:

1. The average age of participants in all seven Keewatin communities was early to mid-twenties (mean = 24.6 years, mode = 19 years, range = 16 to 44 years). Baker Lake's students were the oldest on average in both years of the study (26.2 and 27.0 years). In two communities (Rankin Inlet and Whale Cove) the average age declined an average of 1.1 years between year one and year two of the project; in the other four communities the average increase was 1.1 years. In Coral Harbor, the average increase was greatest at 2.2 years.

2. For students with dependents, the average number of dependents in the Keewatin was 2.4 in both years of the project, with a range of 8 (minimum = 1, maximum = 9). (The Kitikmeot region average in year one was 2.0 dependents). One notable change from year one to year two was the increase in the proportion of participants who were parents: in year one, 32% of Keewatin participants were parents, while in year two 52% were.

3. The average hourly wage of participants in year two increased 6% over year one (from \$8.20 to \$8.73 per hour). The greatest average increase was in Eskimo Point where the year one and year two averages were \$7.95 and \$9.16 per hour, respectively.

4. The average level of education previously completed was 7.4 and 7.5 grades, respectively, in years one and two of the project. The largest discrepancy in

the two years occurred in Coral Harbor, where the increase observed was from grade 7.4 to grade 8.2; in Chesterfield Inlet, the average decrease was 1.4 grade levels, from 8.3 in year one to 6.9 in year two.

5. In year two participants had been out of school longer: the average year of last attendance was 1984 in year one, and 1983 in year two. In two communities, the average dropped three and four years: in Baker Lake the year one average was 1985, while the year two average was 1982; in Coral Harbor the year one average was 1986, while the year two average was 1982.

6. Year two participants averaged four more weeks of employment in the previous year than year one participants had (19 weeks versus 23 weeks). In Baker Lake and Coral Harbor the average increase in year two was 10 weeks (from 13 to 23 weeks, and from 11 to 21 weeks, respectively). In Eskimo Point the average increase was six weeks (from 21 to 27 weeks). In Rankin Inlet, the average number of weeks worked in the previous year declined from 28 to 18 weeks in year two.

These overall observations are based on Table 1.2 (page T1.2; note local variations):

7. Overall, the proportion of former, new and ongoing students was constant from year one to year two: in both years about half of the students were new, one-third were former, and 10% were ongoing. The proportion of former students increased 20% in Baker Lake (from 29% to 49%) and new students comprised 53% of enrollments in year two in Rankin Inlet (up from 33%).

8. The ratio of married to single students was constant in both years at 1:2.

9. The overall gender ratio was 55% male to 45% female; however, the proportion of male students varied widely in year two from 75% (Rankin Inlet) to 22% (Chesterfield Inlet). (The variation in year one was from 79% [Rankin Inlet] to 37 [Whale Cove]).

10. In both years, approximately three-fourths of students were sponsored by CEIC (year one = 77%, year two = 74%).

Tables 1.3 (page T1.3) and 1.4 (page T1.4) show year one demographic characteristics of Kitikmeot Region controls. Table 1.4 (page T1.4) supports these observations:

13. In year one, the average age of Kitikmeot participants was 20.8 years, with a range from 18.2 years (Holman Island) to 22.6 years (Gjoa Haven). The minimum age was 16 years (2 cases) while the maximum was 39 years (1 case).

14. The average number of dependents was 2, ranging from 0 (Holman Island) to 7 (Gjoa Haven). Only 11 participants in this region reported any dependents.

15. Weekly employment income averaged $326, ranging from $405 (Cambridge Bay) to $247 (Holman Island). The range of individual earnings was $50 (Coppermine) to $640 (Pelly Bay) per week.

16. Levels of prior education averaged grade 6.5, but ranged from 5.0 (Pelly Bay) to 7.7 (Holman Island). The range of individual prior educational attainment was grade 3 to grade 10.

17. The last year of attendance for the majority of Kitikmeot students was 1984, ranging from 1982 (Spence Bay) to 1988 (Gjoa Haven). The individual range was 1958 to 1988.

18. Those students with employment histories averaged over 12 weeks of work in the previous year, with ranges from 7.4 weeks (Pelly Bay) to 17.1 weeks (Spence Bay). Individual averages were 1 week to 49 weeks.

These observations are based on Table 1.3 (page T1.3).

19. In the Kitikmeot in year one, 59% of the students were classified ongoing, while one-quarter were new.

20. A large majority (86%) of Kitikmeot students were single.

21. Males comprised 62% of students in the Kitikmeot region, and 29% in the Inuvik region.

22. Approximately one-third (36%) identified GED as a goal of their upgrading.

23. Three-quarters (77%) of Kitikmeot students were CEC-sponsored.

24. Employment earnings (33%), family (31%), and social assistance (25%) were the most common sources of financial support for students in the Kitikmeot Region.

Overall the two regions compared as follows in year one on demographic characteristics (see Tables 1.5 and 1.6, pages T1.5 and T1.6).

25. Keewatin region students were on average three years older than Kitikmeot students (23.8 years to 20.8 years respectively). (In year 2, the Kitikmeot average was 23.4 years, as compared to 24.6 years in the Keewatin.)

26. A higher proportion of Keewatin students had dependents (32% to 23%), and Keewatin students with dependents averaged more dependents than Kitikmeot students (2.4 dependents to 2.0 dependents, respectively).

27. Average weekly salaries were virtually identical ($328 to $326).

28. Keewatin students averaged nearly one grade level more of previous education (7.4 years to 6.5 years).

29. In both regions, the average time since leaving school was three years (1984).

30. Keewatin students averaged one-third more weeks worked in the previous year (19 to 12.2).

31. The Keewatin region had twice the proportion of former (33% to 16%) and new (56% to 25%) students as had the Kitikmeot region. The Kitikmeot region had far more ongoing students than the Keewatin (59% to 10%).

32. One-third of Keewatin students were married, as compared with 14% of Kitikmeot students.

33. Both regions had a majority of male students (Keewatin = 55%, Kitikmeot = 62%). (In year 2, the gender ratio in the Kitikmeot was 50% male, 50% female.)

34. CEC sponsored 77% of students in both regions.

35. There were slightly more social assistance recipients in the Kitikmeot region (25% to 18%); employment earnings and family were the usual sources of financial support in both regions.

Summary: demographic characteristics of participants. In year two of the project there was a slight trend toward older participants (average increase in age = 0.8 years), who were likely to have dependents (52% versus 32% in year one), and who had been away from formal schooling somewhat longer (average previous year of attendance 1983, as opposed to 1984 in year one). Year Two participants also averaged four more weeks of employment in the previous year (23 versus 19), at a higher average hourly wage ($8.73 versus $8.20). On other criteria (average number of dependents, marital status, gender distribution, and sponsorship) participants in the two years were virtually identical.

In comparison with controls in the Kitikmeot region in year one, Keewatin students were older (this was less true in year 2), were more likely to be married and have dependents (and to have more dependents), had accumulated more weeks of employment in the previous year, and had completed more previous education. In addition, CAL permitted work-release students, employed persons, and others with restricted schedules to access the Centre's offerings (see below).

Student attendance

For the September to December, 1987, period the overall daily attendance rate in the Keewatin region was 88.6%. From January to April, 1988, it was 79.5%. (By comparison, in three previous years the average autumn daily attendance rate was 81%, and the spring rate 84%.) (See Attachment E).

In the group interviews conducted in January, 1988, and April, 1989, the adult educators disagreed regarding the exact extent to which CAL had affected daytime attendance rates: some adult educators were definite it had, others saw no effects. This difference of opinion, and the closeness of the attendance rate data, resulted in a conclusion that CAL did not appear to affect daily attendance rates materially.

There was agreement, however, that the total number of registrations was boosted both by upgrading via CAL and by the availability of the specialized programs. (One community reported an increase of several hundred percent in registrations during year one due to these two factors.) There was also a feeling that some students were planning to continue in the program in the next year who would otherwise have dropped out.

Overall, the adult educators concluded that: 1) CAL increased community awareness of their Centre's activities; 2) CAL increased registrations in some programs, especially evening programs; and 3) CAL initially attracted and subsequently helped retain students in their programs longer than they otherwise would have.

Summary: student attendance While daily attendance rates were not affected as compared with previous years, there was agreement that CAL had enhanced students' impressions of the Adult Education Centre, and had helped increase community awareness of and interest in the Centres' offerings. The adult educators were convinced that CAL had substantially increased registrations and had promoted students' persistence in their programs.

Attitudes towards learning with CAL (year 1 only)

Attitudes of students towards learning with CAL were assumed to have a large bearing on attraction and retention of students. Attitudes were assessed with the following instruments: Learning Readiness Scale (Attachment H), Computer Adaptation Scale (Attachment B), Student Writing Journal (Attachment G), Instructor Log (Attachment F), and student and adult educator interviews. (Coral Harbour used the Computer Adaptation Scale in year two; results are provided in Figure A, and below.)

Adult educators made the following comments in interviews and logs about students' learning attitudes with CAL:

Advantages of CAL, as perceived by instructors

1. Students were more positive about learning and spent extra time on the computer beyond what was required.

2. Use of the computer for some students resulted in improved self-image.

Disadvantages of CAL, as perceived by instructors

3. It was necessary to assure social interaction as well as efficient study of academic materials.

4. Some students responded to CAL as if it were a game; i.e., they attempted to "beat the system".

5. Some students attempted to specialize; i.e., they spent all their time in one curriculum.

6. Students wanted challenge; improper placement in material at a too basic level resulted in complaints.

The following ten observations were those most commonly made by students in their writing journals:

Advantages of CAL, as perceived by students

1. PLATO CAL was helpful, friendly, enjoyable, and fun (21% of total comments received in the student writing journals).

2. PLATO CAL helped learning because it was challenging and interesting (15%).

3. PLATO CAL was a faster way to learn (5%).

8. PLATO provided a relaxed and comfortable way to learn (3%).

9. Self-pacing with PLATO was a benefit (3%).

10. Using computers to learn was helpful in preparation for future computer use in employment and in later life (3%).

Disadvantages of CAL, as perceived by students

4. Some PLATO materials were too easy, should be more challenging (5%).

5. PLATO CAL was fatiguing, especially to eyes (5%).

6. PLATO did not explain wrong answers on tests, did not give the opportunity for a second try on wrong answers (4%).

7. There were bugs in both the hardware and the software (4%).

In year one, the Learning Readiness Scale and the Computer Adaptation Scale showed some changes in students' attitudes over the course of their exposure to CAL. (See also Figure A, T5.4 and Figure B, T5.5 - T5.6.) These items of the Learning Readiness Scale showed the greatest changes in students' attitudes in year 1:

	Item	Percent Agreeing, Pretest	Percent Agreeing, Posttest
6.	I usually do poorly on tests.	61%	49%
9.	It's usually ok with me if other people see my mistakes.	73%	33%
10.	Computers make me nervous.	23%	8%
16.	Math is hard for me.	69%	46%
17.	I read a lot on my own for enjoyment.	69%	46%

The following items produced the highest levels of agreement on the Learning Readiness Scale in year 1:

	Item	Percent Agreeing, Pretest	Percent Agreeing, Posttest
1.	I enjoy learning new things.	97%	100%
12.	The more I learn the better job I might get.	96%	98%
13.	I like going to school.	95%	98%
3.	Math is useful.	97%	96%
14.	I think tests are a good way to find out how much I have learned.	95%	96%
5.	I like to work with numbers.	89%	89%
4.	I like to read.	83%	79%
15.	I expect to use computers in my job after I finish upgrading.	88%	77%

With specific reference to computers, there were high levels of pre- and posttest unanimity on the following items from the Computer Adaptation Scale (See Figure A, page T5.4). (Coral Harbour year two posttest results reported also.)

	Item	Average Pretest Agreement	Average Posttest Agreement	Coral Harbour (Year 2)
4.	Using computers [was] too unfriendly.	14%	5%	44%
8.	Using a computer [was] satisfying.	90%	89%	94%
10.	Using a computer [was] interesting.	91%	90%	89%
11.	Using a computer [helped] me like the work more.	89%	89%	100%
12.	Using a computer [was] enjoyable.	88%	95%	95%
13.	Using a computer [was] boring.	9%	14%	29%

More will be said about students' views of the appropriateness of CAL to their Native culture in relation to outcome 5. From the above it seems clear that computer use did not bore or frighten students, and that, on the contrary, satisfaction, interest and enjoyment were high. (The Coral Harbour results indicate that even when the perceived friendliness of the medium was lower other responses continued to be positive.)

Student interviews resulted in comments such as the following.

Q What's better here about the Centre this year?

A Since the computer came it's more comfortable.

Q Do you feel relaxed when you use the computer?

A Yes, I would say so. I don't like sitting in a class when the teacher is writing stuff. I just ignore it. But it gets so exciting with computers that I don't want to stop it.

Q If they decided to take the computers away would you be happy?

A I'll quit school!

Adult educators' views varied, but the following represented the opinion of those who found PLATO CAL a useful tool for attracting, motivating and retaining students:

> I feel the computer has been excellent in my Centre in helping me meet the specific needs of students who have very specific employment goals. I would not have the capability of working with work-release people that I am working with because traditionally I would have had to try to bring them together in a group at the same time such that I could afford to have an instructor for them. Now I can have them working independently on very separate agendas and I just managed those agendas individually, providing supplementary material as need be. That has been something that I think has been very positive about this program. And I think in that area alone I have seen great improvement.

From her perspective, the Project Coordinator noted these advantages of CAL for the appeal of adult education in the various communities:

> [CAL] has taken the stigma out of being an adult education student. It's given it a status. In terms of literacy, it's a way of serving more people. It's broadened the scope for us, in that we can offer subjects in which the lone adult educator doesn't have any expertise. It seems to me it has opened up whole areas we were never able to deal with before. Because we are looking at one adult educator, in some cases, only with part-time help, and when you've got a very wide variety of needs the computers really helped to meet those needs.
>
> I think it's probably one of the most important things, that we can now offer a lot we couldn't before. And when you have small numbers, but a wide variety of needs, this is really the only way.

The Project Manager made these comments about the appeal and effectiveness of CAL in the adult education program.

> I think it made a dramatic shift in the quality of adult education because it gave us a consistent core in all the communities. In isolated communities with few staff it gave us an ability to serve a greater variety of people in the community. It lifted up the image of the Centres in the eyes of the community, in terms of being professional - we've got computers, we're in a modern age. And practically it allowed us

> to serve more people. Instead of only dropouts, we're able to flexibly serve the apprentices, the work-release worker, people in evening courses that are professionals that want to learn computer skills and other skills. It really allowed us to step out of the narrow "we serve dropouts" to "we're an adult learning centre and we're able to serve a variety of needs."

The regional vice-president of Arctic College, who had previously been associated with the project as an instructor in one of the communities, reflected as follows on the impact of this system.

> In terms of total enrollments we're not out of line with everyone else but they're certainly in terms of academic programs much much higher. We have a consistent success rate, we have an award winning program now in a national program on teacher excellence. . . .
>
> The enrollment numbers have gone up, sometimes tremendously; in major centres we can now offer different program specialities and we're not looking to replace the classroom situation - we can put our resources into actual programs and not spend them on bringing people in [from outside the region] all the time. That's so expensive!

Overall, the adult educators recognized these advantages to CAL:

1. The presence of the computers enhanced the prestige of the Adult Education Centre, and made upgrading more attractive.

2. CAL provided greater confidentiality and privacy in learning, again benefitting those with learning problems and phobias.

3. Motivation was increased, especially in math, among students who usually found math tedious.

4. CAL provided a more efficient experience for those with specific learning plans and limited time (employed people).

5. CAL generally produced more consistently high quality of achievement by students.

6. The computer literacy skills gained were highly prized by the students themselves, and were expected to be helpful in assisting them to eventually find employment.

The principal disadvantages of CAL for learning were agreed to be the following:

1. Technical problems in the hardware and courseware which caused general system failures or made some lessons inaccessible.

2. Lack of relation between the PLATO courseware and other curriculum resources.

3. Need for the adult educator to become both computer literate and CAL literate, in order to achieve the maximum benefits of the system.

The Project Coordinator made the following summary in year one, also applicable to year two, in reference to the issue of making learning more attractive to the target population.

1. There was an increase in the number of adults participating in adult education programs in the first year in the region, and the applications for the second year showed a marked increase (Eskimo Point reported an increase of 500%).

2. Students in almost all the Centres stated that they were attracted to the Adult Education Centre courses by the computers.

3. Working people who had computers in their workplaces were attracted to evening courses. It appeared that a new and more varied clientele participated in Centre programs in both years.

4. Students who had been unsuccessful in completing a year of academic upgrading before had completed the year because of the computers.

5. There was a different type of student attracted to the Adult Education Centres. These students appeared to be highly motivated, had more clearly defined career goals, and preferred to work independently.

6. There were many more part-time students who were interested in improving their job possibilities. Because of the availability of computers, working people could come in and work on their academic skills, or attend the computer literacy courses that were now being offered.

7. As computers were now available, more courses were put on to meet the needs of the business communities. Computer literacy, word processing, spreadsheets and database management courses were made available at many of the Centres. It was expected that the numbers of courses would increase with demand.

Summary: attitudes toward learning with CAL The presence of CAL was credited with increasing and maintaining the initial interest of the community in adult education, though the extent to which this was perceived to be true varied across the communities. There was more agreement that the "specialized" offerings made available on the CAL hardware (chiefly word processing, data base and spreadsheets but including higher math, physics and chemistry, and a job search module) accounted for increased participation by those with such interests. Enrollment figures supported the perception that enrollments and persistence of students were enhanced.

In year two there was wider agreement from instructional and management levels about the role of high technology represented by the computers in enhancing the status of the Centres, and hence in helping to increase enquiries from potential students. The contribution of CAL itself was more problematic: once into a CAL-based program some students seemed to experience increased motivation and satisfaction while, in the view of the adult educators, other students were unaffected. Most adult educators agreed that CAL itself had less to do with attracting students initially than the computer hardware. The students themselves (and it must be remembered that those who were interviewed were not dropouts or non-enrollees) expressed enthusiasm for the computers and appreciation for such features of CAL as self-pacing, privacy of results, individualization of content, and enhanced interest and motivation. (As will be discussed below in regard to result 5, there was some question about how well informed the general public was about the presence of CAL per se, as compared with the computer hardware.)

Conclusions regarding anticipated result 1

Analysis of the demographic characteristics of students showed that Keewatin adult education programs attracted a wider spectrum of the adult population as compared with the Kitikmeot region: Keewatin students included more older students, more students who were married and had families, students who had more recent work experience, and students who had completed more education previously. In year two this trend continued and, for some indicators, increased: in year two Keewatin students were somewhat older yet, and had been out of school longer; more students were parents (though the average number of dependents per parent remained the same at 2.4); and students had more work experience and had made a higher average wage.

Keewatin region adult educators, program managers, and Arctic College officials believed the major contribution of CAL had been in greater community awareness of the programs in the Adult Education Centres, resulting in increased participation, especially in part-time and evening programming. Actual student attendance rates in the Keewatin region in year one were approximately the same as in previous years. The adult educators in some communities felt that students persisted longer in their programs, and were more likely to complete larger portions of the program, than previously. Comments by students supported this perception.

Students' attitudes towards adult education and CAL were very positive, resulting in more positive attitudes about learning in general and about the relation of learning to their future employment prospects. Attitudes toward computers also became more positive. Though fatigue and some technical problems occurred, the chief response of students to the computers and to CAL was strongly appreciative and supportive in both years of the project.

Overall, the conclusion was reached that CAL, and particularly the presence of the sophisticated computer system, did indeed enhance recruitment and retention of students in adult education programs of various kinds.

Anticipated Result 2: Producing faster progress in academic training.

TABE Test Results

Speed of academic progress was measured by analysis of TABE test results. The Tests of Adult Basic Education (TABE), 1976 version, were used because they have historically been used throughout the Northwest Territories. The TABE is a timed test, focusing on three skill areas: reading, math and language. There are three levels, easy, medium and difficult, and a locator test to determine which level is most appropriate for each student. There are two forms of the test available at each level. The tests, and the time required for completion of each level, are shown below.

		Time in Minutes		
Skill Area	Test	Level E	Level M	Level D
Reading	1. Reading Vocabulary	9	8	8
	2. Reading Comprehension	31	42	60
Math	1. Math Reasoning	21	20	31
	2. Math Fundamentals	33	50	47
Language	5. Mechanics of English	-	20	20
	6. Spelling	-	12	10
Total		54	158	176

The test Manual contains the following description of the purpose and limitations of the TABE:

> . . . the TABE series is specifically designed to measure basic skills, not content of the various subjects pursued in school, to the end that the student may progress toward greater proficiency in using the basic number and language skills required of him daily in our society. (Administration Manual, 1967, p.6)

In this study no attempt was made to assess the cross-cultural validity of the TABE. (Its producers note that the TABE was based directly on the California Achievement Tests, with "few alterations" [ibid., p. 4]. Interestingly, in the newly-produced [1987] version of the TABE specific mention is made of the developer's efforts in the new test to remove "content bias" in regard to age, gender and ethnicity.) Finally, no content validation was done between the TABE and the PLATO basic skills curriculum used in the pilot project.

In addition to the above reservations, one other fact should be noted in interpreting TABE results. As indicated in the previous section, a major effect of the presence of CAL in the Keewatin region was an increase in overall registrations and a greater retention of students. This resulted in the testing of more students, and of a wider variety of students, than had historically occurred in the region. The Keewatin region TABE results thus include a wider range of abilities and motivations than is historically typical for it or, perhaps, for other regions of the NWT with which it might be compared.

TABE year 1 and year 2 pretest and posttest results from the Keewatin region are shown in Tables 2.1 to 2.3 (pages T2.1 to T2.3). (See also Attachment D, page D-1).

Based on Table 2.1 (page T2.1) the following observations arise:

1. The average pretest grade equivalency was 6.5 in year 1 and 6.1 in year 2. In year 2 all pretest averages except Math Concepts were lower than in year 1. The grade equivalency averages declined in all communities except Eskimo Point (where it remained the same) and Rankin Inlet (where it rose 0.3 grade level). The greatest declines were in Chesterfield Inlet (1.9 grade levels), Whale Cove (1.8 grade levels), and Baker Lake (1.1 grade levels).

2. The widest variations in range in grade levels (GLs) within subtests in the 2 years were as follows:

Subtest	Range, Year 1	Range, Year 2
Reading		
Vocabulary	3.0 GLs	2.4 GLs
Comprehension	2.6	1.8
Total	2.7	2.1
Math		
Computation	1.5	1.8
Concepts	2.0	2.9
Total	1.5	2.0
Language		
Mechanics	2.2	1.7
Spelling	4.9	2.5
Grade equivalent total	2.2	2.4

3. The highest average subscores in both years were in Spelling and Mechanics (8.3, 8.0 and 6.8, 6.7, respectively). In year 1 the lowest average subscore was in Math Concepts, at 5.9; in year 2 it was Vocabulary, at 5.9. (Concepts rose to an average of 6.0; in year 1 Vocabulary had been 6.1).

4. The above data also show that the range in subtest scores declined in Reading and Language, but increased in Math. (Had the decline been across all subscores a "regression to the mean" effect might have been posited. As it stands, there may be some regression effects in that the greatest dispersion had been in Reading and Language, and the least in Math, in year 1.)

These conclusions are based on data from Tables 2.2 and 2.3:

5. Keewatin region increases in TABE scores after 3 and 6 months were consistent at approximately 0.9 grade level in the two years of the project, as shown in Table 2.4. Gains in the Kitikmeot and Inuvik control regions were somewhat higher.

Table 2.4: TABE total grade gain comparisons

Region	N	3-month increase	6-month increase
Keewatin			
Year 1	26	0.63	0.92
Year 2	43	0.64	0.89
Inuvik			
Year 1	-	-	-
Year 2	82	-	-
Kitikmeot			
Year 1	59	-	1.2
Year 2	44	-	1.6

6. Table 2.4 also shows that average gains in the Inuvik and Kitikmeot regions were 1.2 GLs and 1.6 GLs in year 2 respectively; in year 1, the average gain had been 1.2 GLs in the Kitikmeot region.

A further analysis of data related to student progress was made to determine the degree of correlation between time spent in PLATO-based CAL (as reported by instructors), and other measures of progress. Table 2.5 shows results of this analysis.

Table 2.5: Correlation of time spent in PLATO-based CAL with progress indicators

Progress indicator	N	Mean	SD	Correlation with total PLATO time
Pretest grade equivalency (GE)	261	6.55	1.98	.0
Posttest 1 (GE)	184	7.62	2.22	-.12
Posttest 2 (GE)	45	7.36	1.82	.44
Gain between Pretest and Posttest 1 (3 month increase in GE)	173	0.64	0.75	.02
Gain between Pretest and Posttest 2 (6 month increase in GE)	44	0.89	0.91	.20
Other non-CAL time spent in the Centre (hours)	112	15.51	14.0	.70

These findings are based on data from Table 2.5:

1. There was no correlation (r = .0; n = 261) between initial posttest Grade Equivalency scores (3 months after pretesting) on the TABE and time spent on PLATO CAL; there was a moderate positive correlation (.44; n = 45) between these variables and results on the second posttest (6 months after pretesting). (Among the 44 students who comprised the six month cohort, the correlation of total PLATO time with the three month TABE Grade Equivalency gain was .41.)

2. There was no correlation (r = .02; n = 173) between the size of the three month TABE gains and time spent on PLATO; there was a very small correlation (r = .2; n = 46) between six month TABE gains and total PLATO time.

3. There was a relatively high correlation (r = .7; n = 112) between total PLATO time and other time spent in the Centre. This indicates that PLATO users also tended to be heavy users of other resources.

4. There were no differences in achievement as measured by the TABE related to gender or age. Differences observed related to community of origin were not regarded as significant because of the small sample sizes.

Summary: TABE test results. The data from the three regions showed no advantage for Keewatin CAL users. In fact, the two non-CAL using regions' increases were statistically greater.

Within the Keewatin region, the year 2 TABE data showed fewer regional variations than year 1 had: the variance of average scores on TABE subtests was less among communities in year 2 than it was in year 1.

Overall, Keewatin CAL users showed approximately one-half and one grade level gain as measured by the TABE, respectively, for three and six months of study with CAL. The greatest gains were in Math (Computation) and Language (Mechanics); the least gain was observed in the Vocabulary subscore.

Time spent in PLATO tended to be associated with other time spent in the Centre on non-CAL activities. However, the amount of PLATO time was associated with gains in TABE Grade Equivalency scores only moderately ($r = .44$), and only for students who spent six months in the program. (Amount of time spent in PLATO-based CAL also correlated with final TABE Grade Equivalency scores ($r = .7$), indicating that more academically successful students spent more time in the program generally.)

Adult educators' views on speed and quality of learning with CAL.

Keewatin region adult educators noted several effects of CAL related to the amount and speed of student learning. For example:

> Our adult educators appreciate it because they can look at the individual problems the students are having and design a communications or lifeskills course, or whatever, around the individual, because they now have the time to plan for individual curricula.
>
> I would think even furthermore to add to that factor is that you also now have a lot more one-on-one time, even during the computer time. When the individual has a problem you have a lot of individual time where you have a chance to take different approaches with a problem with a person. Time both for planning and time during practice, I would say, is improved.

The Coordinator commented on the lack of evidence that CAL produced faster learning by noting some other benefits for learning and achievement which were apparent to her.

> I didn't expect all the fringe benefits. One of the things I did expect from my own research [occurred] once we started to standardize the curriculum. And that's really important because of all the personalities and skills that were different in the adult educators, so that programs were different. A grade 10 in Chesterfield Inlet would be the same as in Eskimo Point. And whereas some educators didn't teach science and some didn't teach land skills, or whatever, the programs were all so different. Now at least we know that the core program is the same and that seems to be good for the students. . . . That to me is really important. The approach is less ad hoc, and even within the Centre there is more of a sense that we are going somewhere and we are going to get there according to some plan. That's been a direct result of the program, and the students have come to expect it, too. I think it's had a lot of really positive impact.

Other comments by the adult educators confirmed the general perception that CAL had helped standardize the ABE curriculum, and that the transfer of routine clerical instructional functions to the computer was helpful.

In response to a question about which non-CAL components were responsible for such students gains as were noted on the TABE, and other less formal assessments of academic growth, the adult educators' answers included the following: student aptitude and ability; relation with the sponsors; students' level of prior computer literacy; maturity and dependability; and students' memory and concentration ability.

Asked what might be added to the CAL materials to enhance their impact on student learning the adult educators made these suggestions: more reading and writing (students made relatively smaller gains in the Reading and Language portions of the TABE, as compared with Math); more review, including more and different types of application problems and examples; a lower-level science component; and development of Inuktitut language instruction.

One instructor added these observations about factors in the CAL environment which required more or different instructor mediation to assure and reinforce learning.

> [Students need] tutoring and pointing them in the direction of more resources. Three time a week we had what turned into a group tutorial session where people could bring up little problems and we would go over them as a group. Only for about twenty minutes or so, but it sort of evolved into a tutorial. Originally, it was intended to be extra on problem-solving but they would fire up a question and the instructor would show how to approach it and others would help out. And after, they would go back to the computer or get more help. It would help people work together - if anyone was ahead and could help, they would.

Another benefit to student learning included the structure provided by CAL.

> With the computer I think the students appreciate the greater structure. They know they can always sit down and use that system and it will take them to the lesson they need to have. They can set goals and know they will get to that point if they put in the effort. There is definitely a feeling of accomplishment when that happens.

The same instructor voiced a common observation about the TABE scores and their relation to meaningful student growth.

> One concern I had: I know people are learning, I know their skills are getting better at the computer, I know their writing is getting better, their math is getting better. I see it, and then they get into a TABE and it just doesn't show. I guess my major concern is, why not? What is going on, why doesn't it show?

Another instructor added this perception about the effect of personal situations on each learner's progress and on the rate of learning.

> Speed really depends on the individual and how motivated they are. We've had really highly motivated students come in and do really, really well because of that, and make excellent progress. But we've had the other, with emotional baggage they can't deal with, and they see the Centre as a haven for a period of time while they straighten themselves out. The computer gives people a chance to do whatever they are ready and motivated to do.

Summary: speed of learning. Some global comments made by the adult educators which summarized this issue were:

1. Acquisition of computer literacy and CAL is both a problem and a benefit in regard to the speed of learning: it slows the learning of content while computer-literacy skills are being acquired, but it enhances overall self-image and interest in the subject matter once acquired.

2. Word processing (a specialized element of the program available on the hardware but not a PLATO component) was thought to enhance willingness to write and to revise.

3. Students' communication skills were enhanced by the need and desire to describe their PLATO experiences and to seek assistance.

4. Students' maturity and independence as learners were enhanced as they became more adept at CAL self-management.

5. Some students had difficulty adjusting to traditional instruction after their experiences with CAL self-direction and self-pacing capabilities.

Conclusions regarding anticipated result 2

Keewatin region average grade level gains as measured by the TABE using paired results were 0.63 and 0.92 grade levels after three and six months, respectively, in year 1, and 0.64 and 0.89 grade levels, respectively, in year 2. When testing groups were compared, the difference between the pretest (October) group average and the second posttest (April) group average was 1.4 grade levels in year 1, and 1.2 grade levels in year 2. (In comparison, the change in the Kitikmeot region was 1.2 grade levels from pre- to posttest in year 1 and 1.6 GLs in year 2; for the Inuvik region in year 2 it was 1.2 GLs). In year 1 in the Keewatin, the greatest gains (especially in Math and Reading) were observed in communities which had relatively high pretest scores. In year 2 this effect was less evident. No correlation between time spent in the program and TABE grade equivalency gains was noted for group results from either the Keewatin or the Kitikmeot region, in year 1. In year 2, the association observed between CAL time and TABE GE gains for students who spent 6 months in the program was .44.

In interpreting pre- and posttest results, note was made of the lack of cross-cultural content validation data for the TABE, and of the discrepancy in learner demographic characteristics between the Kitikmeot and Keewatin regions. These caveats about the TABE seemed warranted as interviews and logs conveyed the conviction that CAL facilitated learning for students, and teaching for the adult educators, by removing routines from the instructor and permitting greater decision-making on the part of the student. The adult educators reported a wide variety of positive learning effects from CAL. Both PLATO and "specialized" programming were cited as motivating student interest.

Anticipated Result 3: Providing job readiness skills.

This objective was addressed by the Employability Assessment Scale pre- and posttests (Attachment I), by the comments of staff and students in the interviews and writing journals, and by the course-end questionnaire results (Attachment J).

Employability Assessment Results

Tables 3.1 and 3.2 (Attachment T, pages T3.1 and T3.2) show pre- and posttest results on the Employability Assessment, by community, for the Keewatin region for year 1; Table T3.1B and T3.2B (page T3.1B and T3.2B) contain information for year 2. Table 3.3 (page T3.3) shows the items on which the greatest gains were reported from pretest to posttest in year 1; Table 3.3B refers to year 2. (Note that the Employability Assessment was completed by the adult educators after they had become acquainted with the students, and again after the students had left the program. It is thus an assessment based on their impressions and observations.)

From Table 3.3 (page T3.3) come the following observations about year 1 students:

1. In year 1, students were perceived by the adult educators as increasing in the following characteristics:

   1.1 Relations with supervisors (31% increase; Item 11d)
   1.2 Awareness of job market opportunities (22%; Item 10a)
   1.3 Ability, willingness to look for work (18%; Item 6a)
   1.4 Economic responsibility (17%; Item 6e)
   1.5 Ability to write correctly (14%; Item 2b)
   1.6 Ability to understand spoken instructions (14%; Item 2d)
   1.7 Presence of flexible family support (14%; Item 11f)
   1.8 Cooperativeness (14%; Item 12f)

2. Students were perceived as decreasing in these characteristics:

   2.1 Availability for seasonal work only - job not in season (-26%; item 10c)
   2.2 Realistic wage expectations (-17%; item 10d)

Overall, in year 1 on the posttest the following 6 characteristics were attributed to 70% or more of the project's participants (increase over pretest is also shown):

- Cooperativeness (81%; +14%)
- Appearance (79%; +6%)
- Understand spoken instructions (71%; +14%)
- Follows rules (76%; +1%)
- Responds appropriately to criticism (74%; +11%)
- Flexible family support (71%; +14%)

From Table 3.3B, the following observations about year 2 students were derived:

3. Several items in year 2 differed from the findings from year 1.

   3.1 Fewer year 2 students had a history of lengthy receipt of social assistance or unemployment benefits. (In year 2, 90% of students were rated at "low" risk by the time of the post-evaluation on this item.) (Item 6C)

   3.2 Students in year 2 (60%) received high ratings for having career goals which were regarded as "in season"; in year 1, ratings actually declined on this item from pre- to post-evaluation. (Item 10C)

   3.3 Wage requirements at course-end in year 2 were rated highly realistic for over 90% of completing students; in year 1 only 30% were so rated, a decline from their pre-evaluation levels. (Item 10D)

   3.4 Awareness of the job market was rated high in 80% of year 2 graduates; it was so rated in less than 50% of cases in year 1. (Item 10A)

   3.5 As it had been in year 1, family support for graduates was rated high for over three-quarters of the graduates. (Item 11G)

   3.6 Skills in correct writing were rated high in 70% of year 2 graduates; in year 1 the rate was 40%. (Item 2B)

4. Some items received high ratings in year 2 which had not been rated at all highly in year 1.

   4.1 While only 30% of students had had employment goals which were regarded as high demand on the pre-evaluation in year 2, by the time of course completion the proportion was over 60%. (Item 10B)

4.2 Ninety-five percent of the students were credited with high levels of land skills in the pre-evaluation; by course completion only 60% of the graduating students received this rating. (Item 11D)

4.3 Nearly 100% of graduates received high ratings for reading ability, up from just over 75% on the pre-evaluation. (Item 2A)

4.4 High ratings for students' awareness of opportunities, and realism, rose from pre- to post-evaluation from 65% to 80%. (Item 10A)

4.5 Work habits and attendance ratings actually declined, from 70% high ratings on the pre-evaluation to less than 60% on the post-evaluation. (Item 12A)

4.6 High ratings for speaking ability rose on the post-evaluation to near 100%. (Item 2C)

4.7 Job-hunting skills were regarded as high in 60% of graduates, up from just over 50% on the pre-evaluation. (Item 11C)

4.8 High ratings on relationships with supervisors declined from 70% on the pre-evaluation to 60% on the post-evaluation. (Item 11E)

In year 2 these characteristics or attributes of students were rated as high on the post-evaluation in 70% or more of the cases (the amount of increase over the pre-evaluation is shown in parentheses):

- low levels of time on social assistance or unemployment benefits (Item 6C; 92% high ratings; increase of 42%)

- highly realistic wage expectations (Item 10D; 96%; increase of 24%)

- improved reading ability (Item 2A; 97%; increase of 19%)

- greater awareness of/realism in goals (Item 10A; 80%; increase of 14%)

- high levels of family support (Item 11G; 82%; increase of 13%)

- greater speaking skills (Item 2C; 97%; increase of 13%)

- greater writing skills (Item 2B; 72%; increase of 11%)

Course-End Questionnaire Results

One section of the Course-End Questionnaire asked graduates to rate the program they had just completed. These items bore directly on the question of job readiness as perceived by the graduates themselves:

- 97% of the graduates felt they would use their adult education training on the job.
- 73% agreed (22% strongly) that they felt well prepared for employment.
- 87% agreed (33% strongly) that they felt prepared to succeed in other things besides employment because of their training.

On the same questionnaire, students professed these plans and intentions for future employment:

- 14% planned to continue working at jobs they already held.
- 78% of the unemployed graduates intended to look for work; 87% of these intended to seek full-time job.

Staff Comments

Some comments by the adult educators in the group and individual interviews reflected their assessment of students' job readiness, and the degree to which it had been affected.

> I think that question [of the students' potential for employment after program completion] is going to be answered more in the future than it can be right now.

> It's very useful to be able to put on a resume that you've worked with computers. Any computer literacy is an advantage.

Regarding trainability, and level of aspiration of students, one adult educator made this comment:

> Students are progressing, not just on a statistical basis but they are getting further and that's expanding their goals. Their potential for further training is enhanced. They are setting higher goals.

Another adult educator made specific mention of elements of the CAL experience which he felt were particularly supportive:

> When something does finally become completed or mastered, especially at the end of a particularly hard section like Basic Skills Reading or Math, or Fractions or Binomials, there is a real sense of joy on the part of the student - real accomplishment - that's really nice to see.

Another comment by an adult educator in the group interview session addressed the degree to which the learning environment was altered by CAL, permitting more student independence and self-direction:

> The initiative is with the learner. I think that's a really enabling part of this. You don't get the personality conflicts that can enter into it.

Conclusions Regarding Anticipated Result #3

Students acquired or increased several specific skills affecting employability, in the opinions of their instructors, including proper relations with supervisors, awareness of available job opportunities, ability and willingness to look for a job, personal economic responsibility, ability to read, write and speak correctly and to understand instructions, family support, less dependance on social assistance/UIC benefits, and greater goal realism.

Attitudes toward employment were generally positive among graduates; more than three-quarters of graduates had immediate or near short-term employment goals and several of those who did not indicated "further training" as their reason. Overall, the effects of increased computer-literacy, and increased independence, as well as the skills learned in the "specialized" portion of the program, and the presence and popularity of highly specialized training using the computer systems, were those chiefly regarded by students and adult educators as enhancing job readiness.

Anticipated Result 4: Increasing chances of obtaining employment or improving level of employment.

General comments on student job readiness

While, as noted above, graduates' attitudes towards employment were positive and many had concrete plans to pursue job-related goals, the following was also observed:

Q What are your plans?
A I don't know. . . become a mechanic or something. But I think I'll never get there.
Q Why?
A I don't know. . . takes too long.
Q Do you know what it takes to get it - is it apprenticeship?
A I'm not sure. I never looked into it too much.

This exchange involved a 28-year-old male from Chesterfield Inlet:

Q What is your goal?
A Carpenter.
Q Where would you like to work as a carpenter?
A Anywhere.
Q You'd be prepared to move?
A No.
Q You want to stay here? The ideal thing would be to stay here and be able to earn a living as a carpenter?
A Yeah.
Q How is the job situation in Chesterfield Inlet?
A Not enough jobs.
Q Could you earn a living here as a carpenter, really?
A No. I don't think so. Maybe.

This from a 20-year-old male from Eskimo Point:

A After graduation I'll be looking for any job, I'm not too sure what.
Q Do you want to stay here in Eskimo Point?
A Yes, but there isn't much open right now. I would try Fort Smith for a course but I've never been there.
Q Do you know anybody who has gone there for a course?
A No.

These exchanges indicated a potential problem among students at this stage of their progress: lack of a realistic view of requirements for obtaining further training and, ultimately, steady employment in the real world. (As was shown in the preceding section, the adult educators believed this problem had largely been solved by the time students had finished their programs.) See below for further comment on the scope of employment goals.

Specialized and "other" programs

For purposes of this objective, "specialized" was defined as those programs which "are available largely because the computers are available. The program would not normally have been possible, or would have been quite different in form or content, without the computers." Another definition of specialized which emerged in the interviews referred to the kinds of students who enrolled in adult education courses, and persisted, because of the computers. Both of these uses of the term "specialized" are discussed below.

Specialized programs included word processing, spreadsheets and databases, computer-literacy, and a variety of other subjects such as higher math, physics and chemistry, and the job search module. While some of these topics had been offered in the past, the scope of the offerings with the network and file server present was greatly expanded.

"Regular" programs referred to those which had and would have been offered, regardless of whether computer-based learning was available in the Centre. "Other" programming described non-computer-based training which was related to the PLATO or non-PLATO computer-based program. These other activities might include workbook, group, or individual tutorial sessions designed to supplement the computer-based materials.

The following emerged in regard to time spent in regular, other and specialized training.

- In year 1 of the project, students who had both regular and specialized elements in their programs spent approximately 45% of their total time in the specialized activities.

- Students who used PLATO in year 2 and who had spent time in "other" activities in the Centre, averaged 92.3 hours of PLATO time and 15.4 hours of other time (N=111). The range in PLATO usage for these students was 239 hours (from 4 to 243 hours). The range in other time was 67 hours (from 0.3 hours to 67 hours).

- For all PLATO users (N=209) in the region in year 2, the average time spent in PLATO-related programming was 62 hours, ranging from 1 to 243 hours (SD = 64.5).

The above points indicate the following regarding student use of PLATO and other elements of their training program:

- Special training topics were a significant component of programs for those who undertook both regular and specialized training interests.
- The amount of variance in time spent in PLATO and other computer-based learning activities was large, reflecting the wishes and availability of the students.

Table 4.1 shows the proportions of specialized programming undertaken by daytime program students who were enrolled in both regular and specialized courses, in year 1 of the project.

Table 4.1: Proportion of "specialized" program usage among students in programs with both regular and specialized elements*

Community	February #	February %	March #	March %
Baker Lake	9	50%	10	55%
Coral Harbor	20	35%	20	35%
Chesterfield Inlet	0	-	0	-
Eskimo Point	15	41%	17	68%
Rankin Inlet	0	-	9	30%

*This data collected January to April, 1988

Specialized programs accounted for a large part of the adaptability of this innovation to local needs. As noted by the adult educators, the presence of high technology hardware and software enabled them to serve a wider range of clients with traditional programming interests, and to provide state-of-the-art subject matter for those with specific interests. Both of these developments were interpreted by students, employers and other community members as evidence of the Adult Education Centres' increasing currency and relevance.

Plans versus outcomes

The Course-End Questionnaire and the Six-Month Follow-Up Questionnaire gathered more specific information on students' plans for employment or further training. Tables 4.2 and 4.2A show students' specific employment plans at the conclusion of their course, and the actual outcomes reported six months after course end.

Table 4.2: Students' employment plans at course-end

Item	Year 1 (N=96) #	Year 1 (N=96) %	Year 2 (N=106) #	Year 2 (N=106) %	Total (N=202) #	Total (N=202) %
1.0 I already have a job where I will keep working.	22	23%	15	14%	37	18%
1.1 I will look for a job right away.	30	31%	43	41%	73	36%
1.2 I will look for a job later.	22	23%	28	26%	50	25%
1.3 I will stay home.	3	3%	5	5%	8	4%
1.4 Other (Pursue further training).	19	20%	15	14%	34	17%
Total	96	48%	106	52%	202	100%

These observations are based on Table 4.2:

1. Nearly one-fifth of the students (18%) already had a job at course-end, which they expected to keep.
2. Of those who did not have a job the majority intended to look for employment either immediately (36%) or later (25%).
3. Of those not employed, and not intending to look for a job, the majority (17%) were intending to take further training.

Table 4.2A shows the following about actual employment-related outcomes of graduates six months after course-end:

Table 4.2A: Employment-related outcomes; course-end compared with 6-month data

Item	At course-end (N=202) #	At course-end (N=202) %	At 6 months after course-end (N=52) #	At 6 months after course-end (N=52) %
Graduates employed	37	18%	24	46%
Graduates unemployed, but seeking employment (immediately or shortly)	123	61%	21	40%
Graduates unemployed, not seeking employment	8	4%	7	14%
Other	19	20%	NA	-

1. At six months after graduation 23 students (45%) reported they were employed.
2. Twenty-one of the 28 graduates not employed (75%) were seeking employment.
3. Seven of the 28 unemployed (25%) were not seeking employment. (Most commonly, pursuing further training was the reason given.)

Table 4.3 presents information about students' educational plans as they completed their program:

Table 4.3: Students' educational plans at course-end

Item	Year 1 (N=96)		Year 2 (N=106)		Total (N=202)		At 6 months after course-end (N=51)	
	#	%	#	%	#	%	#	%
2.1 Do you plan to take more training?								
Yes	69	72%	78	74%	147	73%	35	69%
Maybe	21	22%	25	24%	46	23%	15	29%
No	6	6%	3	3%	9	4%	1	2%
2.2 If yes, when?								
Within 1 month	24	31%	5	6%	29	19%	5	13%
1 to 3 months	12	16%	16	20%	28	18%	8	20%
3 months or more	41	53%	58	73%	99	63%	27	67%
2.3 What course?								
Medical	2	3%	3	4%	5	4%	0	-
Upgrading	33	53%	37	54%	70	53%	22	61%
Trade	9	15%	8	12%	17	13%	7	19%
Technical	1	2%	4	6%	5	4%	1	3%
Business	2	3%	12	17%	14	11%	4	11%
Other	15	24%	5	7%	20	15%	2	6%
2.4 Where?								
NWT	50	89%	58	98%	108	94%	34	92%
Other	6	11%	1	2%	7	6%	3	8%

These observations follow from Table 4.3:

1. Approximately 70% of these students definitely intended to take further training, while another 29% replied "maybe" to this question. Only 2% definitely did not intend to train further.
2. Most (67%) of the students intended to postpone further training for three months or more.

3. The most commonly mentioned course for further training was upgrading (61%).

4. By far the most commonly mentioned source for further training was the community Adult Education Centre.

Students' longer-term employment intentions are presented in Table 4.4.

Table 4.4: Students' long-term employment plans, course-end and 6-months after graduation

Item	Year 1 (N=96) #	Year 1 (N=96) %	Year 2 (N=106) #	Year 2 (N=106) %	Total (N=202) #	Total (N=202) %	6 months #	6 months %
3.1 Do you expect to use this training on the job?								
Yes	60	71%	57	62%	117	66%	14	64%
Maybe	21	25%	32	35%	53	30%	6	27%
No	4	5%	3	3%	7	4%	2	9%
3.2 Do you intend to work full-time?								
Yes	69	81%	79	89%	148	85%		
Maybe	16	19%	9	10%	25	14%		
No	0	-	1	1%	1	1%		
3.3 In what settlement?								
Baker Lake	7	12%	15	25%	22	19%		
Chesterfield Inlet	1	2%	-	-	1	1%		
Coral Harbour	7	12%	6	10%	13	11%		
Eskimo Point	26	43%	18	30%	44	38%		
Rankin Inlet	6	10%	13	21%	19	17%		
Other	7	12%	9	15%	16	14%		
3.4 Expected/actual starting pay per month, average.	$1472		$1528					
Median	$1400		$1560					
Minimum	$ 300		$ 720					
Maximum	$3600		$2560					

*Includes only students who expected to work outside the home.

Table 4.4 leads to these conclusions:

1. Most students expected to use their adult education training on the job; only 4% definitely did not.

2. Eighty-five percent of students definitely intended to seek full-time employment.

3. Most students intended to seek work in their home settlements. Overall, 86% wished to remain in the Keewatin Region.

4. In year 2 the expected monthly starting salary for the group was $1528, with averages ranging from $1213 in Baker Lake to $1682 in Eskimo Point. (The range of individual averages was $720 to $2560; the median was $1760.) The expected starting pay for females was significantly lower than males: $1346/month vs. $1648/month.

The types of jobs preferred by the respondents are listed alphabetically in Table 4.5.

Table 4.5: Types of jobs preferred by students at course-end actual reported at 6-months

			Expected				Actual	
	Year 1		Year 2		Total		6-month	
Type	#	%	#	%	#	%	#	%
Bookkeeper	2	3%	0	-	2	1%		
Carpentry	13	21%	7	9%	20	15%	6	27%
Cashier/sales	4	7%	2	3%	6	4%	1	5%
Cook	1	2%	2	3%	3	2%	0	-
Electronics/Electrician	3	5%	0	-	3	2%	1	5%
Instructor/Teacher	1	2%	2	3%	3	2%	1	5%
Interpreter	0	-	1	1%	3	2%	1	5%
Janitor	1	2%	2	3%	3	2%	0	-
Labourer	4	7%	4	5%	8	6%	1	5%
Law/Court Worker	2	3%	0	-	2	1%	0	-
Manager/Owner	2	3%	2	3%	4	3%	0	-
Mechanic	8	13%	8	11%	16	12%	3	14%
Mining	1	2%	1	1%	2	1%	0	-
Painter	1	2%	0	-	1	1%	0	-
Radio Attendant	0	-	1	1%	1	1%	1	5%
RN/RNA	0	-	0	-	0	-	1	5%
Secretary	13	21%	22	30%	35	26%	1	5%
Stock Clerk	1	2%	1	1%	2	1%	0	-
Teaching Assistant	2	3%	2	3%	4	3%	0	-
Water Delivery	1	2%	6	8%	7	5%	2	9%
Other	1	2%	13	17%	14	10%	3	14%

The most popular jobs were secretary (26%), carpenter (15%) and mechanic (12%); 53% of all respondents named one of these three goals. Job role stereotyping was present, but not universal: two of the secretarial goals were held by males, and two of the three cooks were female, but all mechanics, carpenters, water deliverers, and labourers were male, while females held all instructor/teacher and clerk goals.

By community, the secretary goals were divided among Eskimo Point (7), Coral Harbour (7), Baker Lake (6) and Rankin Inlet (2); the carpentry among Eskimo Point (3), Baker Lake (2) and Rankin Inlet (2); and the mechanics among Rankin Inlet (4), Eskimo Point (3) and Baker Lake (1).

Although invited to do so (see Attachment J, item 6, 7 and 8), very few students made supplemental remarks on the Course-End Questionnaire.

Conclusions regarding anticipated result 4

Some students appeared to be relatively poorly informed of career opportunities and requirements outside their home communities, or outside a narrow range of occupations, and to be determined to remain in their local area despite the paucity of jobs. The will and confidence to leave familiar locales, even temporarily, to seek outside employment or training was often lacking. At the same time, students were positive about employment as a goal, and believed that their adult education experiences would help them eventually.

In regard to the question of increased employability and promotability, the presence of CAL and of specialized learning opportunities in the communities resulted in increased numbers of enrollments and greater retention of students (as noted earlier), and a wider interest in Centre offerings among already-employed people.

Long-term follow-up revealed these facts about the subsequent employment of graduates:

1. At course-end 18% of graduates were employed, and another 61% intended to look for a job immediately or shortly. Six months later 46% of all graduates had jobs - a rate 28% higher than at graduation but 15% below the proportion who had wished to be employed.

2. At course-end 96% of graduates felt they would use their adult education training on the job; six months later 91% agreed they were doing so.

3. Among graduates not intending to seek employment the most common reason was to continue their studies.

4. At graduation 96% of students intended to take more training (73% definitely); six months later 98% intended to do so (69% definitely). In two-thirds of both cases, the future training was planned for three months or more in the future.

5. Upgrading, trades and business training were consistently the most desired goals for further training; the local Adult Education Centre was overwhelmingly the location of choice for future training.

6. Graduates estimated their starting pay would be $1472 to $1528 per month in the two years of the project. In fact, employed graduates averaged $1762 per month, the maximum reported being $3520 per month.

7. The types of jobs most desired by graduates at course-end were secretary, carpenter and mechanic; at six months, carpenter and mechanic accounted for nine jobs (41%), while only one graduate had obtained employment as a secretary.

As noted earlier, there was sound evidence of students' improved attitudes towards learning, toward computers and toward themselves as capable people and effective learners, all of which would have a direct bearing on their employability and their aspirations for employment enhancement.

Anticipated Result 5: Creation of a new, more effective educational model for Inuit students, that may be used throughout the Arctic.

The question of the impact of PLATO-based CAL and other uses of the computer technology on the learning environment in the Adult Education Centres was addressed by considering several factors: adaptation of students and instructors to the technology; student attitudes toward learning in general and toward computer-based learning and technology in particular; the image of the Adult Education Centres as perceived by the community; the performance of the technology in these remote locations; and the usefulness of the technology as a tool in bridging cultural distances in adult education in the north. As well, previously discussed facts in regard to attraction and retention of students, and learning outcomes, were considered. All these factors were reviewed by the project participants as part of a final exercise in model building, the results which are presented in this section.

Adaptation of students and staff

This objective was addressed in year 1 by the Learning Readiness Scale and the Computer Adaptation Scale, and in year 1 and year 2 by the student and instructor interviews.

The **Computer Adaptation Scale.** Figure A (Attachment T, page T5.4) shows results obtained on the Computer Adaptation Scale (CAS) administered to Keewatin and Kitikmeot students in year 1, and to Coral Harbor students only in year 2. Consistent with earlier findings regarding students' attitudes towards CAL, the principle findings of the CAS were:

- Students reported use of the computer for learning was satisfying, interesting, enjoyable and helpful.

- Students rejected the notion that the computer was boring or unfriendly.

- In year 2, at the request of the local adult educator, Coral Harbor students again used the CAS. Coral Harbor students expressed somewhat more agreement in year 2 that using the computer was slower than other learning methods, and was unfriendly, and somewhat less agreement that the experience was satisfying; nevertheless, they also agreed less that the experience was frustrating, and overall agreed that using PLATO was satisfying. (At the very least, the attitude of this group must be regarded as ambivalent.)

To some extent the Keewatin students' views based on their experience with PLATO were similar to the views of Kitikmeot students who did not use PLATO or any other computer for extensive CAL. However, though the posttest differences between the two groups were sometimes small, two CAS items did suggest how the PLATO experience had affected Keewatin students differently, as compared with the Kitikmeot group (see Figure A):

1. On the year 1 posttest, Keewatin students were more emphatic that PLATO was easy to use (Item 2), and that PLATO had helped them like the work more (Item 11).

2. In year 1, Keewatin students were more likely than Kitikmeot students to agree that they had experienced frustrations using the computers (Item 9).

The **Learning Readiness Scale.** Another instrument designed to measure student adjustment to CAL, the Learning Readiness Scale (LRS), produced these findings in year 1 in regard to Keewatin students (see Figure B, Attachment T, page T5.5):

1. Keewatin students increased their agreement between the pretest and posttest that they enjoyed learning new things, that math was useful, that learning would enhance their job prospects, and that tests were a good way to tell how much they had learned.

2. Keewatin students decreased their agreement in year 1 that they had trouble learning, that they liked to read, that they liked to work with numbers, that learning was hard, that computers made them nervous, that math was hard for them, that they read a lot for pleasure, and that writing tests made them nervous.

3. The highest levels of agreement in year 1 on the posttest were expressed on these items: I think that tests are a good way to tell how much I have learned; I like to learn new things; Math is useful; the more I learn, the better job I might get; I like going to school; and I like to work with numbers.

Kitikmeot students' year 1 pretest results only for the LRS are shown in Figure B; posttests on the LRS were not available for the Kitikmeot region. It is clear that Kitikmeot students did not differ from Keewatin students on attitudes in year 1 measured on the LRS pretest.

Student Interviews. In the interviews conducted in both years of the project and in all communities in the Keewatin region these comments indicated that acceptance for CAL was high, but not uncritical.

(From a 33 year old student, Eskimo Point):

> I like the computers but sometimes they don't have enough explanation. The tutorial is sometimes too short, without enough examples. I like a lot of practice before I go on. I like the tests. Usually we have two or three tests each week and I like it that way.
>
> When I do the tests I sometimes have a problem. Like right now I'm having trouble with the computer math and High School skills. They give us some problems and they do them a little different from how I learned before. It's a little harder.
>
> My suggestion would be to let students go back and do things until they figure it out. I like to go through things until I get the answer on my own without being rushed.

A 19-year-old from Rankin Inlet made these comments:

> I was a bad influence when I was in school. I didn't like it much. I like it better here than back there at the school. Since the computers came along it's more comfortable. I don't like sitting in class. When the teacher's writing stuff, I just ignore it. But it gets so exciting with computers that I don't want to stop it. I end up sitting there.

An employed Rankin Inlet student, aged mid-thirties, who was working toward completion of the GED credential, provided these insights in an interview near the end of the project:

> Q: Overall, would you say the computers are a good idea?
> A: Yes. Yes, I think they are. They are a lot of fun. You really get into them. You can't stop yourself from going back to the computer. It's one of those - I don't know what it is - magnetic type of things.
> Q: What would you tell someone to expect if the came here to do what you are doing?
> A: Be ready to sit for hours and look at the screen for hours. Even the surroundings beside you, you don't even care, you're just looking at the screen.
> Q: Do you notice the time, does it seem long?
> A: No, it's actually quite fast. I know it would be slow for me if I wasn't doing the work I am supposed to be doing. And if I didn't enjoy it it would be slow. But I am enjoying it and the time is just going fast. Because I want to get that GED twelve, I think that's what it is.
> Q: Is it faster or slower than you thought?
> A: Faster! Here I thought it would take me about six months, but it's going to be only about one month.

Q: It sounds like you're a pretty satisfied customer.
A: I am, yes. It has been good. Like I said, I've been enjoying it and I hope to pass.

The students made these observations about the effect of CAL on their individual needs:

Q If they had had computers in the school when you were a kid would it have made any difference to you?
A I think so, yes, I think it would.
Q What difference would it have made?
A I could have worked on more different details, more math and all that. Probably the teacher wouldn't have had too much to do with us. I would have liked that better.
Q Some of the others said they would quit if the computers went. Do you think that is true?
A I think some of them like the computers. I think they would, a lot of them, just drop out. There are definitely more students because of the computers.
Q Does it appeal more to the younger ones?
A I don't know. I don't think so. There are older ones, too. There is something for everybody.

Student Journals. These views were expressed by students in their Journals in year 1:

1. I feel more comfortable learning from a computer. Not because it doesn't tell you what to do - it's more challenging and makes you want to go on and do more work on it.

2. Today the computer was all right. I find it more interesting day by day. The tests are a lot of fun. What's more fun is passing the tests and as it gets harder you want to learn more and it's more like competing against the computer. Since I have started computers I've gained more knowledge in my math. I guess I find it very challenging to beat the computer -- I should say, outsmart it.

3. Sometimes, or most of the time, it's boring because it's a bit too easy. Sometimes there is only one or two hard questions.

4. One of my major dislikes I have about PLATO is it bothers my eyes. I find if I take a short break every hour the discomfort goes away.

5. Does not supply you with the correct answer to a problem on a test after you enter a wrong answer.

6. Today the computer was all right. This time I didn't see any computer errors. I guess whoever reads my journal finally got my message!

7. I thought using a computer would be uncomfortable, but after doing the computer I felt a lot more comfortable knowing how to use it. At first I didn't want to learn to use or to touch computers, but after using one now I know we can all get used to computers. I know I can.

8. I don't like computers because they can't talk to me.

9. Would be nice if the little robot wouldn't go dancing all over the screen.

10. I think only the computer should be the one teaching. Also a little help from an instructor, not by a bossy student! That's what I really hate, and this business on computer work is supposed to be private!

11. One thing I don't like about it is it's a little bit bossy. But I think it's alright because it's not human.

12. The reason I don't like them is we are going too fast, like the South. I wish we could slow down and calmly take it as it came. Do not throw it as us and say this is good for you. Give us time.

Adult Educators' views. In the adult educator group interview, early in the project (January, 1988), these comments were made regarding adaptation by staff and students to CAL.

Comment #1: It puts more demands on the instructor to gain more skills. Where in the past the traditional instructor would be basically doing most of the bullwork in the classroom to a large number, now the instructor has to be far more flexible and has to be able to meet individual needs. We found that our instructors enjoy that challenge.

Comment #2: One of the things I've noticed in my area, the most significant success I see in the program, is the bridge to overcome the fear of failure. Whether the fear is cultural or from an earlier educational experience they have overcome that fear, it is a bridge that has stepped over that. It's non-judgmental.

Comment #3: I've noticed here that particularly introverted students or people who definitely wouldn't come for any kind of program here have come and expressed interest in computer-based learning. I suspect it's because there is not the contact with the instructor they seem not to want. And there are those individuals who previously hadn't successfully completed any of our previous programs, as much as two or three years before, now are beginning to express interest again. Basically they hadn't had anything to do with our program, and now they are thinking about it again.

Comment #4: I find it's easier now to get instructors. They don't have to have great pedagogical skills because you train them on the computer and they go to it. And they can manage the one-on-one help, with the computer giving the tutorial. They don't have to be intimidated by having to stand up in front of a classroom and teach.

Comment #5: They (students) are still very group dependent. They don't want to leave mother and the gang to go work independently. With our students that's their biggest problem. Maturity, and how they socially interact.

Comment #6: With our students it is just the opposite in fact. We found our students taking more control and becoming more independent. In fact, because we're able to chart the students' individual progress, they are no longer able to slough off so easily as they do in the traditional classroom, to just sort of fall asleep. On the computer, though, we're doing an analysis on a weekly basis, he's confronted with his own behavior while he was on the computer, in a very exact form. And I think that has helped mature some of our students.

Comment #7: Two of the things that were emphasized with PLATO were speed of learning and retention. Speed, in my mind there is no doubt, is increased; I have serious doubts about retention. One of the suggestions I made in reference to the Algebra course which I've looked into and had some students work with: retention and speed are increased in that course because of a comprehensive and different course-end review. It's not the exact examples identical to what was just done. It's different questions on our course-end test which occurs no where else in the PLATO system. And finally the backup material is good, with practice and good variety and new examples. Course-end is a real problem, that's where retention is needed.

Comment #8: My feeling is that the acceptance of traditional learning technology has been slower than what I have experienced with this computer technology. In that traditionally, I am standing there lecturing, asking for homework, etc., and I'm hearing from the community that that style was a much more agonizing experience than their experience with the computer since September. This is a much more accepted thing.

Comment #9 I think that's a really critical point of this whole system, that it really does give the instructor the time to be innovative in lesson planning to meet the needs of their students. They are not doing the bull work anymore.

Comment #10 I noticed that the TABE showed an overall better gain in Math than in comprehension. I took note of that particularly. Therefore I must conclude the same as others that the PLATO program relies heavily on the ability of my students to read and comprehend in English. They are doing much better in math, where they understand the numbers or symbols without having to read. They can do that, but when they have to comprehend in English they don't do as well.

Secondly I believe what the computer system is providing a different attitude toward learning in the hamlet. In the sense that now we are going to a high tech situation, we're seeing people master that high tech and gain skills. Not only getting one skill - they go away with a pocket full of skills at the end of any program. Not only computer-based learning but word processing, spreadsheets, various skills outside of that related to technology. The new technology has been difficult to assimilate, but I don't think that is the case here. I think this technology is being accepted quietly by many different users.

Later comments by instructors (January and April, 1989) added detail on a variety of issues related to the appropriateness of CAL in the adult learning environment.

> [The effect on social interaction]: They're still a class, people still help each other. There is a lot of peer-interaction, definitely.
>
> [The quality of the instructional package]: I think it's a great package. It's not everything and the people who sold it to us didn't say it was everything. So I think it's like a set of encyclopedias: if you don't have an instructor who knows what he is doing, who doesn't know how to use the system or use the particular instructional bit you're using, then it's no good. I don't think anything changes as far as having good quality instructors, having them know the actual package, and knowing how to complement it. I think it's great! But you do have to supplement for retention.

[The effect on recruitment of students]: One thing we really noticed this year is that our enrollments really went up. Last year it was a small increase but this year they really did, we had lots of people coming to our doors in the fall. And including this year for the first time we were able to sustain for six months a low-level upgrading class, a bit above basic literacy but low-level reading skills. Initially I think they came because they heard about the computers and they knew other people were coming. Despite the fact that due to scheduling we couldn't actually schedule the computers for them, nonetheless we were able to hang on to a small core group of, by the end, four people for the whole six months, which hadn't happened before. There I can see the computers got them to the door, but weren't essential to keeping them. And also we were getting more work-release people: it's quite easy to schedule them in, usually, and that's always nice because they do well and are easy to deal with.

[The effect on retention of students]: I think students stay in the program because they can see their progress better, with the mastery approach. They know when they are completing the modules and they're getting some place. With a lot of our other stuff it's harder for them to have an idea where they're at. And also working on their own, too. And people certainly seem to work steadily when they are on the computer, where in the other classes you start to see people watching the clock: they want to get back to the computer.

[The impact on hard-core dropouts]: In Baker Lake, far and away the biggest increase in demand has been for daytime upgrading programs. In other Centres it may have been evenings but in Baker it's the daytime: full-time or part-time upgrading. It's been a dramatic increase in numbers and it's also captured the attention of the Community Education Council, partly with some of the lower level people. They were quite pleased because there were some of the so-called "walkabouts" as people call them, young people who have nothing to do but spend their days walking around town.

The biggest change in public awareness of us has been not so much in getting the bright, working members of the community, but in getting the walkabouts, the lower levels. That's what people are sitting up and taking notice of. It's new since the computers have arrived, they notice more programs, so they tend to attribute it to that.

> There is more of a range of students - some come with a great deal of emotional baggage and need a lot of outside help just to work on basic functioning. Others are very motivated and do well. We have more single mothers and people with dependents, outside responsibilities. Some use it as a diversion from daily life and spend enormous amounts of extra time in there.
>
> We are dealing with primarily a young adult, somebody who is anywhere from 17 to 25, and that is a time in anybody's life when there is more upheaval than at any other time. So I think that continues, the problems with alcohol and drugs, the problems with girl or boyfriends, that sort of thing. That stays the same.

On the other hand, some instructor comments identified perceived weaknesses in the system or in implementation of the technology.

> [On the training provided to instructors]: I think a little more time should have been spent finding out where we were at. Just a sort of needs assessment, and be able to some extent to individualize, with enrichment sessions or something for those who were perhaps already pretty literate. I would have found it helpful if they had just spent time on demonstrations with hands-on of other computer applications, instead of just being sent the packages. We were sent Lotus 1-2-3, for example, and it just stayed in its cellophane for quite a while! More training at the beginning, especially, would have helped.
>
> [The quality of the instructional materials]: They're so-so. We do need to find a way to give lower level students access to computer-based instruction, not necessarily PLATO, but perhaps other things. I do feel it's kind of so-so, and thinking back to integrating material is it worthwhile to offer that package to the lower people, to beef up the PLATO, or to just do more totally different approaches in the non-computer time?
>
> [Another view of the effect of computer-assisted learning on completion]: I don't think there has been a dramatic difference in the number of completions. We continue to have the same problems of attendance, motivation. There's somethings which are outside of people's ability to control much, for example babysitting. That's still a problem for us.
>
> [A problem of misguided motivation]: A lot of students seem to be motivated by the system, but not perhaps in the way you would like. They are motivated just to get through it, pass tests, and build up a short-term understanding very quickly. Get through a test, go through the test, see the questions they get wrong, learn

> how to do that question, and get through it. But without seriously building up their retention. So we have to give constant reminders to students to do the tutorials and be responsible and that you have to decide if the test is a good indicator of what you know. Some students respond to that and others are very individual and go their own way.

Managers' Views. The Coordinator made this observation about adaptation to CAL at the community level, from her perspective:

> CAL is going to stay. What the adult educators say to me is it's a given now. We're building our curriculum around it, and it's part of our curriculum. It's accepted, it's a given, it's taken for granted now. I see no way that it will die because it's really so useful. And I can see we will support it - the communities expect it. It seems like it's synonymous with ABE now.

The academic vice-president of the Keewatin region agreed with this assessment, adding the following about the effect of CAL on the image of the College and adult education in the communities.

> It's changed the whole image of adult education. It's an excellent image thing. In the past [ABE] has been more of a babysitting service for the bored, I'm afraid. We turned out heavy equipment operators and carpenters and guides without knowing where the jobs or opportunities were. The communities saw adult education as somewhere where people who were incapable in the community ended up, the drop-outs, the bored, a warm place for the winter. It's cruel but it's true. The communities have finally had enough of that. The computer system came along at a time when it was right. And now we are seeing communities going to bat for their adult education programs, as in Eskimo Point last summer.
>
> We haven't seen the charm wear off in two years. I don't think it will, frankly, but it's highly dependent on the energy of the adult educator to keep the system healthy and running, and the communities seeing it still as being important. I hope that we can get ten years out of this, two five year plans. Which would be a fine return on the investment.

Adult educators' attitudes toward technology. The Instructor Computer Attitude Scale provided information in year 1 on the adult educators' views of Computer-Assisted Learning in their professional lives and in their communities. Table 5.1 (page T5.1) shows those items on which the Keewatin group's views changed from September to February, 1988. Briefly, the changes showed:

1. Less concern or uncertainty that students would be nervous or isolated with CAL.

2. More certainty that CAL had not changed the fundamental role of the instructor.

3. More concern about possible negative effects on teaching from CAL.

4. Mixed feelings from the group about whether CAL provided more time for individual students' problems, the level of information provided to instructors about the project, and whether the need for CAL had been clearly established in the communities.

Table 5.2 (page T5.2) compares the views in year 1 of the adult educators with those of their students, regarding the students' opinions of CAL. (The students opinions are from the Computer Adaptation; items 1 - 12 of the Instructor Computer Attitude Scale paralleled these items.) Overall, Table 5.2 shows the adult educators were more likely than the students to rate these items unanimously; on 10 of the 12 items the adult educators' ratings were either 0% or 100% in agreement, and on the 2 exceptions only 1 adult educator demurred from the group consensus.

The adaptations needed to further refine PLATO CAL for use in the North were gleaned from adult educators' comments in interviews and their logs. These included:

1. More complete documentation for use by adult educators in their communities, including troubleshooting advice. (The suggestion that Control Data install an "800" number [technical hotline] in its Toronto office, made at the January, 1988, adult educators' conference in Rankin Inlet, was acted upon in February, 1988, and produced a "200% improvement", according to the adult educators.)

2. More equipment and software, to ensure availability and back-up capabilities in the event of failure. [This was done in year 2, and produced a more stable hardware environment but further courseware problems, as described below.]

3. Development of an orientation for students that would emphasize the computer as tool and reduce student tension. [Each Centre acted on this in year 2, with generally satisfactory results.]

4. Development or acquisition of offline materials and activities to supplement the computer-based elements, both to provide variety and to assure mastery of skills. Among these should be topics of interest to Northerners. [This was suggested as a topic for a regional conference, perhaps by INET. Local collections and efforts were viewed as growing in size and requiring coordination.]

5. Planning for and commencement of activities to produce learning materials in the Inuktitut language. [This was accomplished and piloted in year 2; see below.]

6. Investigation of the feasibility of providing an audio component to the language instructional materials. [No action was reported on this item.]

7. Identification of the optimum combination of CAL, group work, life skills, individual instructor-student interaction, and oral language development for typical students. [This was a continuing priority, though it seemed to be evolving as experience brought more knowledge of the interaction of CAL and other components of the learning system.]

8. Acquisition or development of additional materials: trades related; business related, especially current, popular accounting packages; access to data bases and telecourses offered by distance learning institutions using technology; courses in topics of local utility, i.e., renewable resources. [This increased in year 2.]

9. Development of standards or benchmarks for measuring the efficiency and rates of student learning, both to counsel students in advance and to monitor subsequent progress. [This remained a problem, especially with the disappointing results of the TABE testing.]

10. Overall, input of the adult educators in the Keewatin region toward the future of program development and revision activities was strongly argued. [The adult educators seemed to feel this was adequate in year 2.]

Students' attitudes about the program at course-end

Table 5.3 contains results of the 10 questions on the Course-End Questionnaire designed to assess students' views of the adult education program they were about to conclude (see also Attachment J). Data are presented for year 1 and 2, and for 5 additional items added for year 2 only.

Table 5.3: Students' attitudes toward the program at course-end

Item	Year 1			Year 2			Total		
	N	% Agree	% Disagree	N	% Agree	% Disagree	N	% Agree	% Disagree
1. My courses prepared me well for a good job.	62	92%	8%	82	95%	5%	144	94%	6%
2. My courses prepared me for other things besides a job.	63	87%	13%	73	86%	14%	136	87%	13%
3. I enjoyed the program.	78	96%	4%	103	96%	4%	181	96%	4%
4. I feel better prepared to succeed. . . .	67	96%	4%	93	97%	3%	160	96%	4%
5. I had to work hard to succeed in the program.	73	89%	11%	92	93%	7%	165	92%	8%
6. My home life suffered because of my studies.	56	27%	73%	87	30%	70%	143	29%	71%
7. The instructors were helpful.	79	96%	4%	100	98%	2%	179	97%	3%
8. I was treated like an adult.	72	96%	4%	94	99%	1%	166	98%	2%
9. I would like to return to the Centre. . . .	70	97%	3%	94	96%	4%	164	97%	3%
10. I would recommend this to a friend.	74	93%	7%	95	99%	1%	163	98%	2%
11. I read more now than I used to.	Items 11 - 15 used in year 2 only.			74	85%	15%			
12. I like to work with numbers.				80	90%	10%			
13. Computers make me nervous.				78	13%	87%			
14. I have trouble learning.				65	32%	68%			
15. I enjoy learning new things.				92	100%	--			

Ninety-five per cent or more of the respondents stated that they:

1. Were treated like an adult (item 5.8; 98%).
2. Would recommend the program to a friend (item 5.10; 98%).
3. Found the instructors helpful (item 5.7; 97%).
4. Would like to return to the Adult Education Centre at some time in the future (item 5.9; 97%).
5. Enjoyed the program (item 5.3; 96%).
6. Felt better prepared to succeed because of the training program (item 5.4; 96%).

As well, a majority of respondents (71%) disagreed with the proposition that their home life had suffered because of their studies (item 5.6).

The findings reported in Table 5.3 include the fact that there was very little variation in opinions between year 1 and year 2: the largest percentage difference in level of agreement was 6% (Item 5.10), while the average difference was merely 2.4%.

Regarding the five additional items added in year 2, the results indicated that at course-end the respondents unanimously agreed they enjoyed learning new things; and a large majority enjoyed working with numbers (90%), denied computers made them nervous (87%), and agreed they read more than they used to (85%). On the other hand, almost one-third (32%) agreed that they had trouble learning.

Views of community members

In order to provide another perspective on the effects of CAL and the computer technology, the principal, guidance counsellor, and instructor of the Career Opportunities Program at the high school in Rankin Inlet were interviewed.

One of the most often repeated observations of project staff and the adult educators involved with the project was that the presence of the computers in their Centres had greatly enhanced the image of the Centres and of adult education generally in their communities (see comments above). These observations were made on the image of adult education and the effects of the presence of computer-assisted learning by the high school staff.

> [The Principal] I did get a bit of feedback from a couple of members of the CEC who were taking a course at the Adult Education Centre, and they seemed to be quite impressed with the hardware that was available because they weren't aware of it. My students tend to look down on adult education, of course, because most of them are academic bound and they don't have a great deal of sympathy for . . . they tend to believe they should have stayed in school in the first place, like they did. My students aren't in awe of it because we have our own computer facilities and programs, and teach it, and so on, and teach computer literacy in grade 10 and computer processing to grade 11.

> [The Guidance Counsellor] Adult education is an option for a lot of these kids who are probably going to drop out and become a member of the walkabouts. So somewhere down the line if they decide they want to get a job, and make something of themselves, adult education is for those people, I suppose, to get back into the system and try to get that diploma, get that job.

A different view was presented by the Career Opportunities Program instructor:

> I've had a number of students go into that program from mine, and so we've been on tours usually just before graduation, just to expose them to what's available down there. I've hear positive things. I only know what I hear from my former students. They say they like it, they say they are learning things, they've lasted for six months, or whatever the term of the program is, so it must be working fairly well.
>
> Q: Have computers had something to do with them staying and enjoying it do you think?
> A: I think so. I think just the idea of using the computer, making learning a little more like a game, I suppose, it would seem to be drawing them. I'd say that about four or five students who have gone on from here.
> Q: What is the reaction to the prospect of going to adult education?
> A: Positive, quite positive.
> Q: Is there any stigma? Do they view it as making up for failing at a younger age?
> A: I haven't seen that attitude myself.
> Q: So among your students there's no real stigma, would you say?
> A: No. No, not at all. In fact, they know all the kids who are down there and I would say they view it quite positively. I have one student who, you know, was not going anywhere very quickly, a student from last year. And he went down to adult ed and he's there everyday and keen and likes those computers. . . and he is very keen! So there must be something going on.

Effective promotion of the resource among the community at large, while occurring already to a degree gratifying to many adult educators, could be expanded, judging from two comments received from these outside individuals.

> The only experience I have had is when I have been in the building. I've looked at the computers and I have seen them myself. To be truthful, though, I have never talked to anyone about them. So I'd guess you would say I don't know very much about it. I would say everything has been low key.
>
> I haven't really heard anything, other than that there was an accounting course offered and they were going to try and get some computer time. Other than that I'm not really aware of the computer program. I often wonder what they do, but I haven't had the time to go down and find out.

Adult educators' concluding assessments and suggestions

The adult educators met for a final appraisal of the project in April, 1989. At this conference they discussed a model for implementation of CAL in the region (see below), reflected on the effects the experience had had on them personally and professionally, and on the task of adult education in their communities and in the region generally. The following presents the findings of this exercise including areas of consensus, as well as points of exception resulting from group discussion of the individual questions.

Most satisfying experience. These were the experiences mentioned. (Comments are verbatim from the adult educators' survey (Attachment M) except for corrections of obvious errors).

- Expanding and improving the service and programs we offer to the community (2 mentions).
- Obtaining a major, highly technical resource for our programs.
- Rapid student confidence growth; enthusiasm that kept them coming until they reached their individual goals.
- Mastering the technology.
- Acceptance of CAL by the community (2).
- Increased/improved profile for adult education.

In the group discussion other responses to this question included the ease with which the high technology had been implemented, the achievement rate and enthusiasm of the students, and the wider range of students attracted to programs.

Most disappointing experience. These comments were received in answer to this question.

- Technical glitches and problems, especially when it was affecting the students (chiefly in the first part of the project).
- That when the project became part of Arctic College and the spearheading influence of the Project Developer was lost in favour of a thrust towards literacy and academic excellence, the PLATO project then lost some of its momentum.
- That there was no attempt to develop a curriculum to support the PLATO program. (Because of the heavy load I was unable to research such a curriculum myself.)
- The inability to raise reading levels to the same extent as math.

- Technical support. Lack of focus for CAL implementation.

- That we didn't see a larger difference in entry and post-TABE test results (2 mentions).

Most surprising outcome.

- At the end of the year students felt much better. I think the computers built up their self-esteem.

- That students completing the two year program have marketable skills and many have gained employment as a result, and others have gone on to college level courses at Arctic College.

- The number of people who wanted to join or become involved in adult education, and the acceptance of the technology.

- The opportunity to offer types of training programs such as Lotus 1-2-3 and Word Perfect.

- Relative ease of implementation. Great increase in number of students using the Centre.

Personal goals met/unmet by the project.

- [Met] That the reliance placed on me to deliver a successful PLATO program has been realized and the PLATO program in my community has been a turnaround for adult education here.

- [Unmet] That the workload was so heavy that I did not get the necessary time to develop a suitable resource kit for students to refer to, to reinforce the concepts presented by the PLATO program.

- Motivated more community residents to take on instructor-tutor roles and increased employers' interest in the upgrading and training of their employees.

- This project really demanded a great deal of organizational and management skills to effectively exploit the technology.

- My artistic skill came in handy with low-level students in helping them express themselves in other ways than in writing.

- Learned more about computer applications and able to integrate these applications into Centre programs.

Effect of the project on adult education in the community, region.

- It has opened a wide range of options for training purposes.

- The PLATO program and its accompanying computers has focused this community that an education is possible without giving in to the southern standards. It is a satisfaction to me to hear the students working at the computers and translating into Inuktitut for their peers who may be having a difficulty with a concept on the PLATO module they may be working on Traditionally, in this hamlet the Inuit have developed a resistance to southern teachers. This resistance stems for the days when the Oblate Fathers and the Grey Nuns enforced the government's decree that all Inuit attend residential schools. They are still suspect of the southern influence on their culture. By removing the "teacher" from centre stage learning has been made easier for the adults of this community.

- [Community] Increased the participation of a wider segment of the population; more people see Arctic College as a means of meeting their needs; more ownership of the programs and greater support by organizations because of improved services; adult training and education are important issues in the community.

- [Region] Better communication between Centres because of the common PLATO core and the improved ability to dialogue (INET); a more standardized curriculum; a higher profile due to the innovative and high tech nature of the project.

- Increased professional role; a viable alternative to what can be available after dropping out of school.

Suggestions and advice

- Better use of the LAN for non-PLATO training; offering of our own PLATO supplements and programs; increased use in first language development (Inuktitut grammar and syllabic typing and writing); attraction of new users such as the school, classroom assistants, elders, apprentices; distance education to access higher level programs for those who cannot leave the community for extended periods.

- That persons with computer training and maintenance ability be selected over those of us who are teachers. I have found that my teaching skills have often been more of a hindrance than a help in this situation.

- Install other computer applications like Word Perfect and Lotus on the LAN. Modularize and computerize where possible all programs so they can be readily brought into the community.

- The PLATO program needs to be more closely involved with the rest of the program. And it also needs revision for the sake of more practice in math skills.

- Greater use of Inuktitut; greater utilization of computers by lower level students; expanded non-PLATO use of computers.

Advice for future implementations

- Be prepared for a sizeable increase in the number of students; PLATO has limited impact when used in isolation and must be supported by communication, lifeskills, and supplementary materials; the role of the instructor changes and staff will need assistance in learning the system and to adapt to a new way of interacting with clients.

- It is worth working for.

- Take either in-house or generic training in DOS and CAL; have background knowledge in CAL and student performance assessment.

- Be prepared for change and spend time getting to know the technology.

- Allow plenty of time for training. Don't use PLATO in isolation; needs curriculum to offset its deficiencies.

Summary. The above indicate the range of opinions and experiences garnered from the participants in the project. The surprising and satisfying outcomes of the program were generally in relation to the numbers and kinds of students attracted, and the changes in student self-image and plans for the future which resulted from their adult education attachment. Disappointments were most often related to the lack of evidence of academic achievement, and the need to acquire and become familiar with a great deal of training and resource material. Overall, as will be seen in the following discussion of the impact of the CAL project on a model for northern education, the participants were positive but were eager to see certain needed changes. It is noteworthy that they were committed to continuing to work with the technology, and were eager to apply their own experience and knowledge to adapting it to the needs of the North.

Inuit program development project

In year 2 of the project an Inuktitut grammar project was conducted with the goal of producing print and computer-based materials for use by those wishing to become familiar with the Inuktitut language, and those who wished to enhance their basic literacy skills in Inuktitut. The materials included a workbook and textbook, and a CML component. Development extended from mid-1988 to early 1989. Piloting of the materials occurred in Rankin Inlet in March, 1989, with a group of Pre-Vocational Training 8 - 10 students who met three hours per day in classes conducted by the program author.

In order to provide some evaluation information regarding the pilot and the materials available to date, interviews were conducted with the project manager, two adult educators who had attended the pilot class as students, an Education Technologist from Arviat who had taught a basic Inuktitut class in the past, an local Inuk who had reviewed the materials, and the course author.

The Project Manager described the rationale for developing the Inuktitut element, and his hopes and fears for its future.

> The desire for computers is growing and will even more so in that those regions that have Inuktitut will know about it, and there is not a lot to compete with this product. This is one of the largest projects to develop Inuktitut language programming anywhere. We have the core of a native language literacy program that no one else has right now, as a resource. Other places may have better people resources but because we have limited skilled knowledge on how to teach we have tools we can use that upgrade our literacy service in Inuktitut beyond what we'd otherwise be able to do.
>
> I am afraid people might just take the textbook and workbook and forget about the computer element, and lose the management capability altogether. That could happen and it wouldn't be the end of everything but it could also be the means of introducing this to other regions. It could go either way, it depends on the people who are managing it and how it's conveyed to them.

One of the two adult educators who participated made these comments about the course and about the piloting process.

> I loved it, myself. I learned a lot. Though it wasn't at the best of times in the year [March 17 - 31, 1989]. The book was very helpful. The computer was annoying at times. At times there were really good lessons on it, at the same time about half the lessons weren't available yet, which were expected and part of the deal, because they just released what they could for this pilot. There was nothing you could do about that. And there were whole

> sections of some tests that gave nothing but wrong answers. The problems were, first the time of year, and the timing was bad, exceptionally bad, actually. They [the PVT 8 - 10 students] wanted to be preparing for tests not doing this, so I think that may have affected how some people reacted, actually. And we went too far too fast. But that was part of the pilot. And one student didn't like it because he had it before. But the instructor was good, fortunately, and that was a plus.

The Ed. Tech., whose experience teaching basic Inuktitut included preparation of a primer which she felt had proven useful to beginners, added these comments and a written summary of her views:

> I think this is far higher Inuktitut, high school or even higher. It's really detailed, really nice! I was sort of hoping it would be for students like we had this year, about grade 8 reading level, but I think this would be very hard for them. This has a lot of jargon. I think it would be good for someone who is interested in linguistics and the structure of Inuktitut, but not for our basic levels.

The written submission from the Ed. Tech. consisted of the following points:

1. The reading level of the program is too high for the students we get at the Centre.

2. Teaching a language in a structure of another language makes it hard to learn because 1) to learn Inuktitut you live the language and 2) no words in Inuktitut for verbs, nouns, etc.

3. The program was done in a different dialect; could have used words commonly used in all communities.

An Inuk resident of Rankin Inlet who had reviewed the print materials was interviewed by telephone. His observations were:

- The materials are "excellent" for the student of language who reads English well. (The reading level is junior high school or so, and the materials become quite advanced quite quickly.)

- While it would be difficult to improve these materials for their target audience, a more basic package will need to be developed for more elementary learners.

- The format of the materials (layout, use of highlighting, type face, general impact of the presentation) is very high quality.

- The local CEC (of which this reviewer was a member) should be supporting and promoting use of the material.

The author of the materials was also interviewed by telephone.

[General comments]

- The audience for the course and its materials is an adult who might not be a confirmed reader, and who might lack a formal background in English grammar, but who is able to read at approximately the grade 10 level and who is motivated to learn the language.

- The material contained in the text and workbooks is extensive, covering as much as would be included in two university level Eastern Arctic Teacher Education Program (EATEP) courses. Therefore, it might be more realistic to ask all adult education students to cover the first six chapters (containing "a significant amount of basic grammar"), and allow those with special interest in the language to work on from there.

- The computer-based portion of the course is important, though the course is much more text than computer-based.

- The pilot showed that the recordkeeping capabilities of the PLATO system are important to the student and instructor, though students must be taught how to use the technology appropriately. (Some students simply tested until they passed, ignoring feedback that they should review or study concepts further before continuing their testing.)

- As a first experience with an editorial team this project was a great success: the quality of the product and the efficiency of the process were high.

- Though numbers of students in the pilot were small the students were largely happy with the project, except that the training occurred at a poor time. Also, participation of the two adult educators (who were non-Native) was important to show that the course has general utility, and to discourage it from becoming a "linguistic ghetto".

The author added that he felt much work could be done to develop further materials for other audiences, especially those below the grade 10 reading level. He noted that EATEP had expressed "cautious interest" in the course to that point, and that further development might be needed to address their concerns about the difficulty level of the materials.

Technical Problems in Implementation

Problems related to installation and use of the hardware and software were encountered in both years of the project. In one community (Coral Harbor) the problems caused major disruption of implementation for some weeks in the fall of 1987. As a result of general concerns about documentation of and attention to technical problems on a timely basis, Control Data established an 800 number in January, 1988, for use by the adult educators in the region. As noted earlier, this provided a "200% improvement", as perceived by the adult educators.

In the April, 1989, adult educators' conference the question of technical problems was posed. The project developer put the problem of technical reliability of LAN-based PLATO into perspective with these comments.

> The technical problem came really because we were one of the first users in Canada at the time. There were other systems in Canada but not on a LAN. In fact, the original proposal was for the stand-alone terminals and diskettes, but the delay with approval of the budget was enough time for the LAN to become available. We knew we were one of the first to use that new package but we weren't in any way aware of how much proofreading we would have to do and how many technical details we'd have to deal with. But they [Control Data] still bent over backwards to provide service.

The Project Coordinator made these remarks regarding technical reliability of the system.

> Unfortunately, with getting the new system [in January, 1989], we've been hit with glitches. It seems we're into untried material again. And that's been really unfortunate. The first batch was the first time on LAN and they did indeed try with always sending fixes and so forth. Now getting the new system and getting glitches again I think that's really been disruptive to the project.

The adult educators had varying experiences with the technology and varying degrees of success in coping with problems. The adult educator in Rankin Inlet made these observations.

> I would say 98% of the time we were up and running with no problem. Before Christmas it seemed we had a lot of trouble with batteries. But we tested and talked to Control Data and it was a cable. Fortunately it was the first thing we checked and we found it right away.
>
> Control Data have been fairly responsive. There were a number of lessons that had problems, some pretty serious, like "line attach errors" in Basic Reading. But I talked to them about it and they told me what to punch in at the

> file server and we were off and running. We had problems in some of the algebra lessons similarly and I believe they're working on them too. We found that if the technical support staff is in town they are very good but if not there doesn't seem to be anyone else around who can fix a problem. On the other hand they were always there to answer the phone at the hotline and they do get back to you.

As noted earlier, one result of these technical problems was a recommendation by the adult educators for more extensive training and more hands-on experience prior to use of this system with students. Experience showed that some adult educators became very proficient in managing their hardware, while others found most problems nearly insurmountable. There was consensus that Control Data provided good support, and that the "fixes" provided by the company throughout the project improved the software's performance. New problems arose, however, with the changeover to the new file server in January, 1989, requiring a new round of such fixes.

From experience to a model for CAI implementation in the North

In January, 1989, project participants generated a series of observations about their experiences which were further refined in April, and labelled "elements of a new educational model incorporating CAL" (Attachment N). The model contains a synopsis of the project's findings vis-a-vis practical questions of planning for and implementation of CAL in remote environments. Areas addressed include student flow characteristics (recruitment, placement, diagnosis and completion expectations); staff roles (administrative, instructional and professional); student roles (new and traditional); training demands; instructional elements (online and offline); recordkeeping and documentation (implications of all the information generated by the system); communications and networking; and regional/local concerns (specific problems resulting from local anomalies).

Throughout development of the model the focus was on the practical implications of the findings and experiences of the project participants. In addition to what is contained in the model itself the following comprises advice which the participants would direct toward others who might engage in a similar implementation process in the future.

1. Provide time for training, installation, familiarization. Staff noted the problem of discomfort with the technology which was caused by the short time between their training and the arrival

of students to use the system. If a trained person is not available, they recommend that training be extended to allow for more practice of basic instructional tasks (rostering, program management, record checking and data extraction, integration of online and offline materials).

2. Orient community stakeholders and keep them informed.

3. Orient students thoroughly. Deal early with phobias.

4. Provide demonstrations to the community. Take the technology to the people. (In one community a system was set up in the local Bay store on a Saturday with gratifying results.)

5. Use one vendor for all hardware and software; purchase support with the hardware and software. Buy a complete system and be wary of minimum or clone systems. Integrate computer and non-computer elements.

6. Find open, adaptable, realistic staff. Other useful staff characteristics: oriented to individual needs; committed, hardworking; technically capable or willing and eager to learn; broad content expertise.

7. Choose a variety of assessment tools, do not rely on one only (i.e. TABE).

8. Be prepared for greater activity in the Centre. New demands will occur in these areas:

   - information dissemination
   - demonstrations of the technology
   - testing/assessment of individual needs
   - special interest topics

9. Assure compatibility of the technology.

10. Secure support from all levels of the organization.

Conclusions regarding anticipated result 5

This anticipated result may in fact be regarded as the most fundamental objective of the project. To the degree that CAL and the computer technology attracted students, aided learning, facilitated a cultural program, and enhanced employability or promotability, it would be seen as a viable and worthwhile innovation for the Arctic. Certainly, CEC funding of the project under the innovations aegis implicitly assumed that such an outcome was possible.

As was seen in the previous discussion of the other four anticipated outcomes, and as is summarized in part 3 of this report, CAL and the computer technologies resulted in a number of tangible benefits: the image of the Adult Education Centres was enhanced, resulting in increased enrollments for both the "walkabouts" and employed persons seeking advancement; more advanced and technical training was available through the Centres than could have been offered by the adult educator alone without the technology base; the ABE curriculum was standardized by CAL resulting in a more uniform program; students and instructors accepted the technology and learned to use it to advantage as part of a package of tools and resources; and outside observers regarded acquisition of the technology and broadening of programming as positive steps and a coming of age of the adult education program in the communities.

Weaknesses were also identified: the technology, which changed in the last quarter of the project, contained technical problems which, though addressed professionally and conscientiously by the manufacturer, caused problems for students and staff; the proper mix of on- and offline resources was a concern, and a curriculum development objective of the adult educators; the lack of marked academic improvement as measured by the TABE was a puzzle; and the adult educators, depending on their level of computer literacy, expressed a desire for more training and more opportunity to become familiar and comfortable with the technology prior to working with students on it.

The computer-based model of learning in this study thus did meet many of the needs of the Keewatin region related to adult learning, public relations, accountability, proactivity, cultural sensitivity, and androgogy. It is perhaps unnecessary to say that in the process of becoming a valuable innovation the technology did not solve every problem of adult education in the region, and it did not solve any problem perfectly. Nevertheless, the comments of those involved, and the behaviour of the most important participating group, the students, indicated basic acceptance of and satisfaction with the innovation, and optimism that it would continue to adapt to regional and local needs and opportunities.

PART 3: CONCLUSIONS

Anticipated result 1: attracting and maintaining the interest of the target population.

Analysis of the demographic characteristics of students showed that Keewatin adult education programs attracted a wider spectrum of the target population as compared with the Kitikmeot region: Keewatin students included more older students, more students who were married and had families, students who had more recent work experience, and students who had completed more education previously. In year two this trend continued and, for some indicators, increased: in year two Keewatin students were somewhat older, yet, and had been out of school longer; more students were parents (though the average number of dependents per parent remained the same at 2.4); and students had more work experience and had made a higher average wage.

Keewatin region adult educators, program managers, and Arctic College officials believed the major contribution of CAL had been in greater community awareness of the programs in the Adult Education Centres, resulting in increased participation, especially in part-time and evening programming. Actual student attendance rates in the Keewatin region in year one were approximately the same as in previous years. The adult educators in some communities felt that students persisted longer in their programs, and were more likely to complete larger portions of the program, than previously. Comments by students supported this perception.

Students' attitudes towards their adult education programs and CAL were very positive, resulting in more positive attitudes about learning in general and about the relation of learning to their future employment prospects. Attitudes toward computers also became more positive. Though fatigue and some technical problems occurred, the chief response of students to the computers and to CAL was strongly appreciative and supportive in both years of the project.

Overall, the conclusion was reached that CAL, and particularly the presence of the sophisticated computer system, did indeed enhance recruitment and retention of students in adult education programs of various kinds. Of particular importance was the attraction of groups hitherto only minimally involved in adult education in this region: employed and work-release persons engaged in skill enhancement and expansion of their promotional possibilities, and chronically unengaged young adults (the "walkabouts").

Anticipated result 2: speed of academic progress.

Keewatin region average grade level gains as measured by the TABE using paired results were 0.63 and 0.92 grade levels after three and six months, respectively, in year 1, and 0.64 and 0.89 grade levels, respectively, in year 2. When testing groups were compared, the difference between the pretest (October) group average and the second posttest (April) group average was 1.4 grade levels in year 1, and 1.2 grade levels in year 2. (In comparison, the change in the Kitikmeot region was 1.2 grade levels from pre- to posttest in year 1 and 1.6 GLs in year 2; for the Inuvik region in year 2 it was 1.2 GLs). In year 1 in the Keewatin, the greatest gains (especially in Math and Reading) were observed in communities which had relatively high pretest scores. In year 2 this effect was less evident. No correlation between time spent in the program and TABE grade equivalency gains was noted for group results from either the Keewatin or the Kitikmeot region in year 1. In year 2, the association observed between CAL time and TABE GE gains for students who spent 6 months in the program was .44.

In interpreting pre- and posttest results, note was made of the lack of cross-cultural content validation data for the TABE, and of the discrepancy in learner demographic characteristics between the Kitikmeot and Keewatin regions. These caveats about the TABE seemed warranted as interviews and logs conveyed the conviction that CAL facilitated learning for students, and teaching for the adult educators, by removing routines from the instructor and permitting greater decision-making on the part of the student. The adult educators reported a wide variety of positive learning effects from CAL. Both PLATO and "specialized" programming were cited as motivating student interest.

While these data led to the conclusion that there was no evidence of faster academic progress as measured by the TABE in either year of this project, there was evidence, from students and from the observations of the adult educators, of more widespread interest in the adult education centres offerings, and higher levels of students self-esteem, as a result of CAL and the presence of the computers.

Anticipated result 3: providing job readiness skills.

Students acquired or increased several specific skills affecting employability, in the opinions of their instructors, including proper relations with supervisors, awareness of available job opportunities, ability and willingness to look for a job, personal economic responsibility, ability to read, write and speak correctly and to understand instructions, family support, less dependance on social assistance UIC benefits, and greater goal realism.

Attitudes toward employment were consistently positive among graduates; more than three-quarters of graduates had immediate or near short-term employment goals and several of those who did not indicated "further training" as their reason. Overall, the effects of increased computer-literacy, and increased independence, as well as the skills learned in the "specialized" portion of the program, and the presence and popularity of highly specialized training using the computer systems, were those chiefly regarded by students and adult educators as enhancing job readiness.

Students who participated in CAL gained general computer skills and familiarity which was regarded as prima facie evidence of greater employability. Those who completed specialized training in various computer-based business applications gained specific skills which local employers actively sought.

Anticipated result 4: increased employability and promotability.

Some students appeared to be relatively poorly informed of career opportunities and requirements outside their home communities, or outside a narrow range of occupations, and to be determined to remain in their local area despite the paucity of jobs. The will and confidence to leave familiar locales, even temporarily, to seek outside employment or training was often lacking. At the same time, students were positive about employment as a goal, and believed that their adult education experiences would help them eventually.

In regard to the question of increased employability and promotability, the presence of CAL and of specialized learning opportunities in the communities resulted in increased numbers of enrollments and greater retention of students (as noted earlier), and a wider interest in Centre offerings among already-employed people.

Long-term follow-up of students revealed these facts about the subsequent employment of graduates:

1. At course-end 18% of graduates were employed, and another 61% intended to look for a job immediately or shortly. Six months later 46% of all graduates had jobs - a rate 28% higher than at graduation but 15% below the proportion who had wished to be employed.

2. At course-end 96% of graduates felt they would use their adult education training on the job; six months later 91% agreed they were doing so.

3. Among graduates not intending to seek employment the most common reason was to continue their studies.

4. At graduation 96% of students intended to take more training (73% definitely); six months later 98% intended to do so (69% definitely). In two-thirds of both cases, the future training was planned for three months or more in the future.

5. Upgrading, trades and business training were consistently the most desired goals for further training; the local Adult Education Centre was overwhelmingly the location of choice for future training.

6. Graduates estimated their starting pay would be $1472 to $1528 per month in the two years of the project. In fact, employed graduates averaged $1762 per month; the maximum was $3520 per month.

7. The types of jobs most desired by graduates at course-end were secretary, carpenter and mechanic; at six months, carpenter and mechanic accounted for nine jobs (41%), while only one graduate had obtained employment as a secretary.

As noted earlier, there was sound evidence of students' improved attitudes towards learning, toward computers and toward themselves as capable people and effective learners, all of which would have a direct bearing on their employability and their aspirations for employment enhancement.

Graduates showed evidence of employment, and reported in large numbers that their employment was related to their training in the Adult Education Centre. Comparative data on employment rates for similar demographic cohorts and locations would be needed to assess the significance of the employment rates and patterns observed in this project.

Anticipated result 5: creation of an effective new educational model for the North.

CAL and the computer technologies produced or contributed to a number of tangible benefits: the image of the Adult Education Centres was enhanced, resulting in increased enrollments for both the "walkabouts" and employed persons seeking advancement; more advanced and technical training was available through the Centres than could have been offered by the adult educator alone without the technology base; the ABE curriculum was standardized by CAL resulting in a more uniform program; students and instructors accepted the technology and learned to use it to advantage as part of a package of tools and resources; and outside observers regarded acquisition of the technology and broadening of programming as positive steps and a coming of age of the adult education program in the communities.

Weaknesses were also identified: the technology, which changed in the last quarter of the project, contained technical problems which, though addressed professionally and conscientiously by the manufacturer, caused problems for students and staff; the proper mix of on- and offline resources was a concern, and a curriculum development objective of the adult educators; the lack of marked academic improvement as measured by the TABE was a puzzle; and the adult educators, depending on their level of computer literacy, expressed a desire for more training and more opportunity to become familiar and comfortable with the technology prior to working with students on it.

The computer-based model of learning in this study thus did meet many of the needs of the Keewatin region related to adult learning, public relations, accountability, proactivity, cultural sensitivity, and androgogy. It is perhaps unnecessary to say that in the process of becoming a valuable innovation, the technology did not solve every problem of adult education in the region, and it did not solve any problem perfectly. Nevertheless, the comments of those involved, and the behaviour of the students, indicated basic acceptance of and satisfaction with the innovation, and optimism that it would continue to evolve to meet regional and local needs and opportunities.

The CAL model, and presence of the computer systems, contributed to an effective environment for learning which attracted a wider range of students, resulted in learning gains while enhancing learners' self-images, led to growth in employment-related attitudes and skills, and in actual employment of graduates. Problems identified in hardware and courseware were being addressed at project end, as were gaps in the learning package related to lack of native language materials. The support of students, staff and managers was generally strong, as was interest in continuing to work with the system to capitalize on its strengths and address its weaknesses.

ATTACHMENTS

ATTACHMENT B

COMPUTER ADAPTATION SCALE

1. Computer Adaptation Scale (Pretest - September, Posttest - December)

1.1 Administer very early in the program -- before the student is oriented to or uses PLATO, if possible. (Please note on the form how much PLATO use the student had, if any, before the CAS was administered. If you make no notes, I will assume it was done before any PLATO experience was given.)

1.2 Check that name, date and location are filled in.

1.3 Provide any reading help or interpretation the students require.

1.4 If a student finds an item unclear or is reluctant to give a rating, skip the item or circle '0' (zero).

1.5 Return to Pat when completed. (Paste post-paid envelope on a larger one, if necessary.)

PRETEST

COMPUTER ADAPTATION SCALE

Date ______________ Location ______________ Name ______________

Circle:
0 if you DON'T KNOW or HAVE NO OPINION
1 if you STRONGLY DISAGREE
2 if you DISAGREE
3 if you AGREE
4 if you STRONGLY AGREE

	DK	SD	D	A	SA
1. I think that using a computer for learning would make me nervous.	0	1	2	3	4
2. I think that using a computer for learning would be easy.	0	1	2	3	4
3. I think that using a computer for learning would be slower than using other methods.	0	1	2	3	4
4. I think that using a computer for learning would be too unfriendly.	0	1	2	3	4
5. I think that using a computer for learning would make me feel too alone.	0	1	2	3	4
6. I think that using a computer for learning would be more flexible than other methods.	0	1	2	3	4
7. I think that using a computer for learning would be efficient use of my time.	0	1	2	3	4
8. I think that using a computer for learning would be satisfying.	0	1	2	3	4
9. I think that using a computer for learning would be frustrating.	0	1	2	3	4
10. I think that using a computer for learning would be interesting.	0	1	2	3	4
11. I think that using a computer for learning would help me like the work more than other methods.	0	1	2	3	4
12. I think that using a computer for learning would be enjoyable.	0	1	2	3	4
13. I think that using a computer for learning would be boring.	0	1	2	3	4

POSTTEST

COMPUTER ADAPTATION SCALE

Date ______________ Location ______________ Name ______________

Circle:
0 if you DON'T KNOW or HAVE NO OPINION
1 if you STRONGLY DISAGREE
2 if you DISAGREE
3 if you AGREE
4 if you STRONGLY AGREE

	DK	SD	D	A	SA
1. I found that using PLATO for learning made me nervous.	0	1	2	3	4
2. I found that using PLATO for learning was easy.	0	1	2	3	4
3. I found that using PLATO for learning was slower than other learning methods.	0	1	2	3	4
4. I found that using PLATO for learning was too unfriendly.	0	1	2	3	4
5. I found that using PLATO for learning made me feel too alone.	0	1	2	3	4
6. I found that using PLATO for learning was more flexible than other methods.	0	1	2	3	4
7. I found that using PLATO for learning was efficient use of my time.	0	1	2	3	4
8. I found that using PLATO for learning was satisfying.	0	1	2	3	4
9. I found that using PLATO for learning was frustrating.	0	1	2	3	4
10. I found that using PLATO for learning was interesting.	0	1	2	3	4
11. I found that using PLATO for learning helped me like the work more than other methods.	0	1	2	3	4
12. I found that using PLATO for learning was enjoyable.	0	1	2	3	4
13. I found that using PLATO for learning was boring.	0	1	2	3	4

ATTACHMENT C

STUDENT INFORMATION FORM

REVISED: JANUARY, 1988
SEPTEMBER, 1988

2. Student Information Form (September, or at program start)

2.1 Administer when students begin the program.

2.2 Have students estimate if exact information is not available (i.e., employment details).

2.3 Use the other side of the form for further information you believe is relevant to the evaluation.

2.4 Send copies to Pat when complete. Send updates if new information is acquired. (Please indicate what information on the form is new.)

STUDENT INFORMATION FORM

NAME ______________________ LOCATION ____________________

FORMER/NEW/ONGOING* ________ TOTAL HOURS PER WEEK _________

PROGRAM TYPE** _____ regular

_____ special

_____ both

PROGRAM DATES _______________

PROGRAM NAME ____

* * * * * *

BIRTH DATE _______ SEX: M F

MARRIED SINGLE NUMBER OF DEPENDENTS _________

GOAL ____

SPONSORED BY: ____

MOST RECENT EDUCATIONAL LEVEL COMPLETED __________ WHEN _______

WEEKS WORKED IN PREVIOUS YEAR ________ HOURLY RATE __________

---

*Former: registered in your Centre in some program at some previous time.

New: never registered in your Centre before.

Ongoing: registered in the same program in your Centre in the immediately preceding term.

** Regular: A "traditional" Adult Basic Education or GED program. Content and scheduling are not substantially affected by the availability of the computers.

Special: The program is available largely because the computers are available. The program would not normally have been possible, or would have been quite different in form or content, without the computers.

Both: The student's program has both regular and special elements.

09/12/88

TABE TEST

3. TABE Directions (September, or program start, December and April)

3.1 Administer the TABE according to the directions in the administration manual.

3.2 Administer the TABE:

- a) In the first week of the student's program.
- b) At the Christmas break, OR when the student leaves the program.
- c) At the end of the program (April), OR when the student leaves the program.

3.3 If a student has written the TABE in the previous 12 months, do not re-test -- use the most recent score as the entry score.

3.4 Use alternate forms of the test on successive testing dates (i.e., alternate Form A and Form B so the student doesn't write the same form twice in a row.)

3.5 Enter TABE results on the TABE Results Form, and send a copy to Pat. Send posttest information when available.

3.6 If the test is not administered according to the administration manual, make a note of any changes to the procedures and send that with the results.

3.7 If you have any questions, phone Heidi or Pat (403/422-0663) for clarification.

TABE Results

REVISED: SEPTEMBER, 1988

Location ______________________________ Date ____________________

CAL#	Student's Name	READING			MATH			LANGUAGE		TOTALS	TEST INFO		
		Voc	Comp	Total	Compu	Concpts Probs	Total	Mech Expr	Spelling	Grade Equiv	Level	Form	Event#

#Event = pre (pretest), pst1 (first posttest), pst2 (second posttest).

NOTE: Retest if the student's results are more than 6 months old.
Use April results in September for pretest, if available.
Use alternate forms of the test, BUT USE THE SAME LEVEL, for posttests.

MONTHLY ATTENDANCE REPORT SUMMARY

REVISED: January, 1988

4. Monthly Attendance Report Summary (Monthly)

4.1 Use this sheet to summarize monthly attendance for all students who use PLATO as part of their program.

4.2 Indicate in the "Program" column which type of program the student was engaged in (i.e., upgrading, work release, personal interest, etc.).

4.3 "Possible days" includes all days the Centre was open and students were expected to attend.

4.4 "Actual days" includes only days the student actually attended. Do not allow excused absences in computing this total. (This number may differ from "official" attendance figures, depending on policies for excused absences.)

4.5 Mail the totals to Pat monthly.

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MONTHLY ATTENDANCE REPORT SUMMARY REVISED: SEPTEMBER, 1988

Instructor: ______________________________

Date of Report: ______________________________

Location: ______________________________

Period of report: __________ to__________

CAL #	NAME	PLATO HOURS	OTHER COMPUTER HOURS	POSSIBLE DAYS	ACTUAL DAYS

ATTACHMENT F

INSTRUCTOR WEEKLY LOG

5. Instructor Weekly Log (September and October, for 6 weeks)

5.1 Please try to find a quiet few minutes each week to write something about the week's activities. Write more often if you wish.

5.2 Use point form or shorthand -- I will try to interpret!

5.3 Mail weekly in envelopes provided.

5.4 Phone Pat (403/422-0663) if you prefer.

Week 1

TEACHER WEEKLY LOG

Name ____________

Date: ____________ Location ____________

Surprises: ____________

____

____

Problems: ____________

____

____

Disappointments: ____________

____

____

Suggestions/Ideas: ____________

____

____

* * * * * *

On a scale of 1 to 10 (10 = highest, best), rate this week's:

Student learning ______

Student satisfaction ______

Hardware performance ______

Courseware performance ______

Classroom atmosphere ______

Student attendance ______

Student concentration on tasks ______

Comments: (Continue on back) ____________

____

____

ATTACHMENT G

STUDENT WRITING JOURNAL

6. Student Writing Journal (September and December for 2 weeks)

6.1 Ask able students to participate -- explain that they are part of an experiment/research project and that the outside researcher is interested in their opinions.

6.2 The topic for the first 2 weeks (September) is: "What did you like and dislike about the computer?"

6.3 The topic for the last 2 weeks (December) is: "What did you like and dislike about the program you just took?"

6.4 Cue students, if necessary, by reminding them of things they said or did that day, or asking them questions ("How hard did you think the test was that you did on the computer this morning?"). Have them write the answer in their journal.

6.5 Ask students to do the journal every day for the first 2 weeks of the program, and the last 2 weeks before Christmas. Send the journals to me in one package, at the end of the 2-week period. Use the pre-paid envelopes.

6.6 Treat the journals as confidential, if it makes the students happier.

STUDENT WRITING JOURNAL

Objective: To give students who are able an opportunity to regularly record their initial and later impressions of PLATO.

Implementation: For the first two weeks of their use of PLATO allow 5 to 10 minutes per day for able students to write anything they wish about PLATO ("the computer"). Spelling, grammar, punctuation don't count on this exercise. Point-form is acceptable. Emphasize that this is their chance to give advice, make suggestions, or vent frustrations at the computer. Also make it clear that you (the teacher) won't see what they write, but that someone (PF) will summarize all the comments and that you will see the anonymous results. You can tell them this is part of the evaluation of the computer project, if you wish.

At the end of the 2-week period collect all the writing at once and send it to me.

Similarly, 2 weeks before the end of the term ask students to again write their comments. This time, ask that their comments deal with (1) the course in general, (2) their future plans, (3) the strengths and weaknesses of the program, and (4) their suggestions for improvement of the computer part of the program. As before, promise confidentiality and mail the results to me for compilation when they are all collected.

ATTACHMENT H

LEARNING READINESS SCALE

7. Learning Readiness Scale (September and December, or when leaving)

7.1 Administer this scale early in the first week of the program, and again near the end or when a student is about to leave.

7.2 Use the same form for Pretests and Posttests.

7.3 Send pretests to Pat when completed.

H-2

LEARNING READINESS SCALE

Name ______________________

Location ______________________

Date ______________________

CIRCLE:
0 if you DON'T KNOW or HAVE NO OPINION
1 if you STRONGLY DISAGREE
2 if you DISAGREE
3 if you AGREE
4 if you STRONGLY AGREE

	DK	SD	D	A	SA
1. I enjoy learning new things.	0	1	2	3	4
2. I have trouble learning.	0	1	2	3	4
3. Math is useful.	0	1	2	3	4
4. I like to read.	0	1	2	3	4
5. I like to work with numbers.	0	1	2	3	4
6. I usually do poorly on tests.	0	1	2	3	4
7. Learning is hard for me.	0	1	2	3	4
8. I hate to read.	0	1	2	3	4
9. It's usually ok with me if other people see my mistakes.	0	1	2	3	4
10. Computers make me nervous.	0	1	2	3	4
11. I would rather be taught by a person than by a machine.	0	1	2	3	4
12. The more I learn, the better job I might get.	0	1	2	3	4
13. I like going to school.	0	1	2	3	4
14. I think tests are a good way to find out how much I have learned.	0	1	2	3	4
15. I expect to use computers in my job after I finish upgrading.	0	1	2	3	4
16. Math is hard for me.	0	1	2	3	4
17. I read a lot on my own for enjoyment.	0	1	2	3	4
18. I get nervous when I have to write a test.	0	1	2	3	4

EMPLOYABILITY ASSESSMENT

(Revised) REVISED: JANUARY, 1988

8. Employability Assessment (October and April)

8.1 When you feel you know your students well enough (but by the end of the first month, please), complete this assessment.

8.2 If you do not feel you can assess on certain criteria, omit them.

8.3 Assess again after the student completes or leaves the program.

8.4 Forward when completed to Pat.

Student's name/ID: ____________________

EMPLOYABILITY ASSESSMENT (Revised)

CRITERIA	LOW (1-3)		MID (4-7)		HIGH (8-10)		COMMENTS
2. LANGUAGE DIFFICULTIES							
a) Reading	Cannot		Functional (simple instructions & street signs)		Reads		
b) Writing	Cannot		Writes, simple structure		Correct grammar		
c) Speaking	Non-English		Broken English, ungrammatical		Fluent		
d) Understands spoken instructions	Unable		Slow, Minimal understanding		Clear understanding with fast comprehension		
6. MOTIVATION & ATTITUDES							
a) Able	Restricted		Some limitations		No limitations		
willing & looking	Refuses jobs, not looking		Work as necessity, looking with assistance		Wants to work & enjoys work, seriously looking independently		
b) Confidence level	Believes will fail, unrealistic		Some strengths		Believes will succeed, realistic		
c) Time on assistance, unemployment	Over on full year		Under 1 year		Less than 3 mos.		
d) Ability to defer gratification related to employment	No control		Some control		Can wait & plan		
e) Degree of economic responsibility	None		Demonstrated responsibility for self		Demonstrated responsibility for self & others		

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	CRITERIA	LOW (1-3)	MID (4-7)	HIGH (8-10)	COMMENTS
9.	CHILD CARE NEEDS	Problem child (physical or behavioural problem) unstable child care arrangements	Stable child care	No need for care	
10.	JOB MARKET FACTORS				
	a) Aware of opportunities	Unrealistic, no awareness	Limited awareness	Realistic awareness	
	b) Obsolesence factor	Declining demand	N/A	In demand	
	c) Seasonal availability	Job not in season	N/A	Job in season	
	d) Wage Requirements	Unrealistic	N/A	Realistic	

EMPLOYABILITY ASSESSMENT

CRITERIA	LOW (1-3)	MID (4-7)	HIGH (8-10)	COMMENTS
11. MISCELLANEOUS CRITERIA				
a) Appearance	Inadequate, Inappropriate dress, Unkempt appearance	Will dress up & clean up if job depends on it, needs help in securing adequate work clothing	Good clothing & appropriate grooming for job	
b) Housing	No housing, unsafe, unsanitary, pending eviction, institutional setting	Inadequate room, Rent too high; Halfway house, Motel, Hotel	Adequate, private home or apartment	
c) Job Hunting Skills	Cannot complete applications, lacks interview skills, does not know where to look for employment	With help can improve skills, using options to improve skills	Application & interview skills high, high personal sale ability'	
d) Supervisor Relationship	No or little contact	Adequate communication & co-operation	Co-operation & high communication skills with supervisor	
e) Social Skills	Identified behavioural problem; shy, indifferent or anti-social	Lacks confidence & skills but responds well after time	No behavioural problems, converses & relates comfortably with others	
f) Family Support	Non-supportive, Inflexible	N/A	Flexible support	
12. REFERENCES				
Employer	No	N/A	Yes	
Training Instr.	No	N/A	Yes	
a) Work Habits -attendance	Poor	Few absences with reasonable excuses, informs employer if going to be absent	Regular, Informs	

CRITERIA	LOW (1-3)		MID (4-7)		HIGH (8-10)		COMMENTS
12. REFERENCES - cont'd.							
b)-cleans work station	Never cleans		Cleans with reminders &		Cleans on own		
c)-follows rules	Never follows rules		Follows rules but resents being told what to do		Follows rules		
d)-responds to criticism	Inappropriate behaviour, denial, ignores		N/A		Responds appropriately		
e)-responds to instructions	Does not listen, Does opposite		Follows with guidance & supervision		Appropriate, follows instructions properly		
f)-co-operates	Not co-operative		Sometimes not co-operative		Usually co-operative		
g)-quality of work	Poor quality		Adequate		Excellent		

Total

Total

Total

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Date: ________________

Evaluated by: ____________________

ATTACHMENT J

COURSE-END QUESTIONNAIRE

9. Course-End Questionnaire (December and April, or at program end)

9.1 Administer in the last week of the program, or before a student leaves.

9.2 Assist with problems of interpretation. Leave blank any items which can't be interpreted clearly.

9.3 Inform students that you (or someone from the adult learning centre) will be contacting them again in a few months to see how their plans are developing. Ask for their cooperation in keeping in touch (phone numbers, whereabouts, etc.).

9.4 Forward Questionnaires to Pat when completed.

COURSE-END QUESTIONNAIRE

Name ______________________ Program ______________

Date ______________ Location ______________CAL # ____

Please answer all these questions carefully. Your answers will help us improve our courses for adults. Your answers will be kept confidential -- your instructor will not see your questionnaire.

THANK YOU!

* * * * * * * *

1. EMPLOYMENT PLANS: What are your plans after you leave this program? (Please check ONE only):

1.0 ( ) I already have a job where I will keep working.

1.1 ( ) I will look for a job right away.

1.2 ( ) I will look for a job later. (When? ______________)

1.3 ( ) I will stay at home.

1.4 ( ) Other. (Please explain): ______________________

____

2. FUTURE EDUCATIONAL PLANS:

2.1 Do you plan to take more courses or training at any time in the future? Yes No Maybe

2.2 If YES, what course? ______________________

2.3 What school/institution? ______________________

2.4 When?

2.4.1 ( ) Within 1 month

2.4.2 ( ) With 1 to 3 months

2.4.3 ( ) Within 3 months or more

3. JOB READINESS: If you DO plan to work OUTSIDE your home after you leave this program, check ONE reply to each of the following:

3.1 Do you expect to use this training on the job? Yes No Maybe

3.2 Do you intend to work fulltime? Yes No Maybe

3.3 In what town or settlement would you like to work? ______________

3.4 What do you expect your STARTING pay to be? $__________ per hour

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(OVER, PLEASE)

4. TYPE OF JOB: What kind of job do you want when you look for a job?

4.1 Job choice: ____

5. ABOUT YOUR PROGRAM:

Circle DK if you DON'T KNOW
SD if you STRONGLY DISAGREE
D if you DISAGREE
A if you AGREE
SA if you STRONGLY AGREE

5.1 My courses prepared me well for a good job.	DK	SD	D	A	SA
5.2 My courses prepared me for other things besides a job.	DK	SD	D	A	SA
5.3 I enjoyed the program.	DK	SD	D	A	SA
5.4 I feel better prepared to succeed because of this training program.	DK	SD	D	A	SA
5.5 I had to work hard to succeed in this program.	DK	SD	D	A	SA
5.6 My homelife suffered because of my studies.	DK	SD	D	A	SA
5.7 The instructors were helpful to me.	DK	SD	D	A	SA
5.8 I was treated like an adult in the program.	DK	SD	D	A	SA
5.9 I would like to return to the Adult Education Center again in the future.	DK	SD	D	A	SA
5.10 I would recommend this program to a friend.	DK	SD	D	A	SA
5.11 I read more now than I used to.	DK	SD	D	A	SA
5.12 I like to work with numbers.	DK	SD	D	A	SA
5.13 Computers make me nervous.	DK	SD	D	A	SA
5.14 I have trouble learning.	DK	SD	D	A	SA
5.15 I enjoy learning new things.	DK	SD	D	A	SA

6. WHAT WAS THE MOST HELPFUL PART OF YOUR PROGRAM?

7. WHAT SHOULD BE CHANGED TO IMPROVE YOUR PROGRAM?

8. OTHER COMMENTS:

SIX MONTH FOLLOW-UP QUESTIONNAIRE

Name ______________________________ Program ____________________

Program end date ______________ Location ______________ CAL# ______

Hello!
Six months ago or so you completed a training program at the Adult Education Centre. We would like to ask you some questions about that course. Your answers will help us improve our programs for adults. The answers will be kept confidential -- your instructor will not look at your questionnaire.
THANK YOU!

* * * * * * * *

1. If you ARE employed:

1 What is your job? ______________

2 What is your hourly pay? ________

3 Hours worked each week? ________

4 Weeks on this job? ____________

5 Is your job (check ONE):

___ closely related to your training
___ somewhat related to your training
___ not related to your training

6 Do you intend to (check ONE):

___ keep this job for now

___ quit within 2 months and find another job in this community

___ move somewhere else and work

___ other ____________________

1. If you are NOT employed:

1 How many weeks have you worked in the past 6 months (26 weeks) ________

2 Was your last job (check ONE):

___ closely related to your training
___ somewhat related to your training
___ not related to your training

3 Are you (check ONE):

___ looking for a job right now
___ planning to look for a job within 3 months
___ not planning to look for a job for now

4 When you look for a job, what job will you look for?

____

* * * * *

ALL STUDENTS PLEASE COMPLETE THIS SECTION

2. PRESENT EDUCATIONAL PLANS:

2.1 Do you plan to take more courses or training at any time in the future? Yes No Maybe

2.2 If YES, what course? ____________________

2.3 What school/institution? ____________________

2.4 When?
2.4.1 ( ) Within 1 month
2.4.2 ( ) With 1 to 3 months
2.4.3 ( ) Within 3 months or more

09/88

(OVER, PLEASE)

5. ABOUT YOUR PROGRAM: Looking back at your program in the Adult Education Centre, please rate the following statements.

Circle DK if you DON'T KNOW
SD if you STRONGLY DISAGREE
D if you DISAGREE
A if you AGREE
SA if you STRONGLY AGREE

5.1 My courses prepared me well for a good job. DK SD D A SA

5.2 My courses prepared me for other things besides a job. DK SD D A SA

5.3 I enjoyed the Adult Education program. DK SD D A SA

5.4 I feel better prepared to succeed because of the training I took. DK SD D A SA

5.5 I had to work hard to succeed in the Adult Education program. DK SD D A SA

5.6 My homelife suffered while I was in the Adult Education program. DK SD D A SA

5.7 The instructors in the Adult Education program were helpful to me. DK SD D A SA

5.8 I was treated like an adult in the Adult Education program. DK SD D A SA

5.9 I would like to return to the Adult Education Center again in the future. DK SD D A SA

5.10 I would recommend this program to a friend. DK SD D A SA

5.11 I read more now than I used to. DK SD D A SA

5.12 I like to work with numbers. DK SD D A SA

5.13 Computers make me nervous. DK SD D A SA

5.14 I have trouble learning. DK SD D A SA

5.15 I enjoy learning new things. DK SD D A SA

6. WHAT WAS THE MOST HELPFUL PART OF YOUR PROGRAM?

7. WHAT SHOULD BE CHANGED TO IMPROVE YOUR PROGRAM?

8. OTHER COMMENTS:

ATTACHMENT M

Adult Educators' Survey

April, 1989

1. What was the best of most satisfying experience you had as a participant in this project?

2. What was the most disappointing experience?

3. What was the most surprising outcome?

4. Which of your personal goals were/were not achieved in this project?

5. Which of your personal skills or abilities were/were not used in this project?

6. In your opinion what has this project done for adult education in your community, and in the region?

7. What changes would you suggest for future uses of this technology in the community and region?

8. What advice would you give to another adult educator about to embark on a similar project?

9. Other (Please make any other comments you wish):

ATTACHMENT N

DRAFT

Elements of a New Adult Educational Model

Incorporating Computer-Assisted Learning

1. Student flow

    1.1 Recruitment

        1.1.1 Generally, CAL enhances recruitment.

    1.2 Placement

        1.2.1 While providing additional information, CAL may complicate, protract and rigidify the placement process.
        1.2.2 Students must be reassured if the placement experience is negative or disappointing.
        1.2.3 CAL-based placement can provide useful information, and even time savings, if flexibly employed.

    1.3 Diagnosis

        1.3.1 CAL may contribute to the diagnostic process especially in math and science.

    1.4 Program completion, student persistence

        1.4.1 The structure of CAL contributes to motivation, persistence, and analysis of learning results.
        1.4.2 CAL provides another source of guidance and structure to students and the instructor.
        1.4.3 For low-level students who do not use CAL, its unavailability may be discouraging.

2. Staff Roles

    2.1 Administrative

        2.1.1 CAL requires technical attention and time from the administrator.
        2.1.2 CAL may also require a philosophy change, from traditional to androgogic.

    2.2 Instructional

        2.2.1 CAL increases responsibilities on the instructor for student - instructor tutorials, androgogy, student autonomy, learning facilitation, checking for mastery, diagnosis, and attention to life skills.

. . . . . /2

2.2.2 CAL produces decreased instructor requirements for marking, traditional curriculum development activities, and short-term, adhoc planning.

2.3 Para-professional

2.3.1 Para-professionals can effectively assist with CAL.

3. Student Roles

3.1 New Student Roles

3.1.1 More peer tutoring and interaction may occur.
3.1.2 Greater individual accountability, self-evaluation, self-motivation, enhanced self-image, self-confidence, sense of accomplishment, articulateness, pride, and satisfaction.
3.1.3 More time spent on task, greater involvement in learning, more care expended on assignments (use of word processor improves amount and attention to writing).
3.1.4 Less clock watching, inattention, disruption from attendance problems.
3.1.5 Less long-term retention, if CAL is not supplemented with additional drill.
3.1.6 For the student, both rewards and responsibilities are increased with CAL.

4. Training

4.1 Generally, the more knowledge about computer systems the more use of the system's capabilities will be realized.

4.2 Training should

4.2.1 occur
4.2.2 be based on trainees' needs and experience
4.2.3 be ongoing and recurrent
4.2.4 be supported by (preferably local) expertise and resources

4.3 With CAL, the fundamental academic and professional training required for an adult educator remain the same.

5. Instructional Elements

. . . . ./3

5.1 The complete program consists of both computer and noncomputer-based components.

5.2 The CAL component provides structure and interaction with the student which formerly had to be provided solely by the adult educator.

5.3 CAL permits the adult educator to spend more time and effort on

- 5.3.1 identifying needs in the learning system
- 5.3.2 doing curriculum development for individual needs
- 5.3.3 incorporating technological literacy into the program

5.4 Conclusions regarding the effects of CAL on instruction

- 5.4.1 Instructors must be adaptable.
- 5.4.2 Time allocations change and must vary for individual students.
- 5.4.3 A mix of integrated materials and activities is required (math is more amenable to computer-based learning; reading is likely to require more non-computer-based activities).
- 5.4.4 A broader spectrum of training becomes available in the community.
- 5.4.5 The comfort level of students with technologies generally is increased.
- 5.4.6 The focus of students on completion of curriculum increases.
- 5.4.7 The need for the instructor to check for mastery increases.
- 5.4.8 Materials (offline) keyed to CAL curriculum are needed.

6. Recordkeeping and Documentation

6.1 CAL captures and makes available data which is useful to instructors and managers for:

- 6.1.1 Student progress
- 6.1.2 Time spent
- 6.1.3 Module averages
- 6.1.4 Equivalencies

6.2 A system for exploiting the available data must be developed.

- 6.2.1 Development of such a system is worthwhile, as the data are more plentiful and may be more valid than those traditionally available.

. . . . . /4

7. Communications and Networking

7.1 Media which efficiently enhance access by adult educators to information and advice are required, to allow problem-solving, increased morale, team-building, and reduced feelings of isolation (increased feelings of common purpose).

8. Regional Concerns

8.1 The experience of having and using CAL-related data increases expectations for greater recordkeeping, analysis and archiving.

8.2 The systematic and efficient development and delivery of complex curriculum development projects and products are enhanced.

8.3 During the implementation of CAL all the components of the program require a formative evaluation and modification, to assure a successful implementation process and an integrated product.

8.4 The investment in CAL increases community demand and raises expectations, which require long-term funding, planning and public relations.

8.5 The informed support, involvement and commitment of all staff, from front line implementers to senior managers, is required.

8.6 CAL and the accompanying hardware have potential uses in human resource development policy implementation, which may be of interest and of use to senior planners and policy makers.

8.7 Implementing CAL requires resources:

    8.7.1 Space
    8.7.2 Electrical wiring
    8.7.3 Furnishings
    8.7.4 Environmental regulations (regarding smoking, drinking, eating, access)
    8.7.5 Hardware peripherals

8.8 The availability of CAL provides the capacity to develop native language instruction of consistent quality in a local region.

Table 1.1: Demographic characteristics of Keewatin* participants (averages)

	BL		CH		CI		EP		RI		WC		Total	
Characteristic	#	Avg.	#	Avg.	#	Avg.	#	Avg.	#	Avg.	#	Avg.	#	Avg.
AGE														
Year One	13	26.2	16	21.4	18	21.9	72	24.7	14	23.0	8	21.8	147	23.8
Year Two	35	27.0	28	23.6	7	22.6	60	24.9	15	21.9	4	19.8	149	24.6
NUMBER OF DEPENDENTS (A)														
Year One	5	2.8	8	2.4	6	2.3	16	2.3	4	2.3	3	2.0	47	2.4
Year Two	18	1.8	18	2.7	5	1.8	31	2.7	5	1.6	-	-	77	2.4
HOURLY WAGES, PREVIOUS YEAR (B)														
Year One	7	8.03	4	8.78	8	7.50	44	7.95	14	8.45	6	8.23	85	8.20
Year Two	24	8.68	24	8.18	1	12.00	47	9.16	13	8.27	-	-	113	8.73
PRIOR GRADE LEVEL COMPLETED														
Year One	12	8.5	16	7.4	14	8.3	69	7.2	13	7.4	7	6.9	136	7.4
Year Two	34	18.4	31	8.2	7	6.9	61	7.0	13	7.2	5	7.2	151	7.5
YEAR OF LAST SCHOOL ATTENDANCE														
Year One	14	1985	16	1986	19	1984	72	1982	14	1984	8	1983	149	1984
Year Two	32	1982	33	1982	8	1984	61	1983	15	1983	5	1987	154	1983
WEEKS WORKED IN PREVIOUS YEAR (C)														
Year One	9	13	13	11	8	24	67	21	13	28	7	10	119	19
Year Two	28	23	22	21	2	7	47	27	14	18	4	12	117	23

(A) Those with 1 or more dependents only.
(B) Those reporting earnings only.
(C) Those with a work history only.

* BL = Baker Lake
CH = Coral Harbour
CI = Chesterfield Inlet
EP = Eskimo Point
RI = Rankin Inlet
WC = Whale Cove
No data available from Repulse Bay

Table 1.2: Demographic characteristics of Keewatin* participants (frequency)

	BL		CH		CI		EP		RI		WC		Total	
Characteristic	#	%	#	%	#	%	#	%	#	%	#	%	#	%
STUDENT TYPE														
Year One														
Former	4	29%	3	20%	1	8%	30	42%	3	25%	4	50%	45	33%
New	6	43%	11	73%	12	92%	38	53%	4	33%	4	50%	76	56%
Ongoing	4	29%	1	7%	0	-	3	4%	5	42%	0	-	13	10%
Total	**14**	**10%**	**15**	**11%**	**13**	**10%**	**72**	**53%**	**12**	**9%**	**8**	**6%**	**135**	**100%**
Year Two														
Former	18	49%	4	13%	0	-	29	48%	4	27%	2	33%	57	36%
New	15	41%	20	65%	6	67%	31	51%	8	53%	4	67%	84	53%
Ongoing	4	11%	7	23%	3	33%	1	2%	3	20%	0	-	18	11%
Total	**37**	**23%**	**31**	**20%**	**9**	**6%**	**61**	**38%**	**15**	**9%**	**6**	**4%**	**159**	**100%**
MARITAL STATUS														
Year One														
Married	7	50%	6	40%	3	18%	25	35%	3	23%	2	25%	49	35%
Single	7	50%	9	60%	14	82%	47	65%	10	77%	6	75%	93	65%
Total	**14**	**10%**	**15**	**11%**	**17**	**12%**	**72**	**51%**	**13**	**9%**	**8**	**6%**	**142**	**100%**
Year Two														
Married	11	28%	12	41%	3	33%	23	38%	1	7%	0	-	50	32%
Single	28	72%	17	59%	6	67%	38	62%	13	93%	6	100%	108	68%
Total	**39**	**25%**	**29**	**18%**	**9**	**6%**	**61**	**39%**	**14**	**9%**	**6**	**4%**	**158**	**100%**
GENDER														
Year One														
Female	8	57%	10	59%	8	57%	28	39%	3	21%	5	63%	65	45%
Male	6	43%	7	41%	6	43%	44	61%	11	79%	3	37%	80	55%
Total	**14**	**10%**	**17**	**12%**	**14**	**10%**	**72**	**50%**	**14**	**10%**	**8**	**6%**	**145**	**100%**
Year Two														
Female	19	49%	19	61%	7	78%	18	30%	4	25%	3	50%	70	43%
Male	20	51%	12	39%	2	22%	43	70%	12	75%	3	50%	92	57%
Total	**39**	**24%**	**31**	**19%**	**9**	**6%**	**61**	**38%**	**16**	**10%**	**6**	**4%**	**162**	**100%**
SPONSOR														
Year One														
CEIC	7	58%	7	88%	9	90%	21	84%	10	77%	4	50%	59	77%
Self	5	42%	1	12%	1	10%	4	16%	3	23%	4	50%	18	23%
Total	**12**	**16%**	**8**	**10%**	**10**	**13%**	**25**	**33%**	**13**	**17%**	**8**	**10%**	**77**	**100%**
Year Two														
CEIC	15	12%	13	48%	5	100%	23	89%	14	88%	2	33%	72	74%
Self	0	-	13	48%	0	-	1	4%	1	6%	4	67%	15	16%
Total	**17**	**18%**	**27**	**28%**	**5**	**5%**	**26**	**27%**	**16**	**17%**	**6**	**6%**	**97**	**100%**

**Multiple responses were permitted on this question.

* BL = Baker Lake
CH = Coral Harbour
CI = Chesterfield Inlet
EP = Eskimo Point
RI = Rankin Inlet
WC = Whale Cove
No data available from Repulse Bay

Table 1.3: Demographic Characteristics of Kitikmeot* (control) students (frequency): Year 1

Characteristic	CB		CO		GH		HI		PB		SB		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Student Type														
Former	0	-	0	-	0	11%	1	17%	0	-	5	71%	7	**16%**
New	1	14%	4	50%	-	-	3	50%	1	14%	2	29%	11	**25%**
Ongoing	6	86%	4	50%	8	89%	2	33%	6	86%	-	-	26	**59%**
Total	**7**	**16%**	**8**	**18%**	**9**	**20%**	**6**	**14%**	**7**	**16%**	**7**	**16%**	**44**	**100%**
Marital Status														
Married	2	40%	0	-	2	25%	0	-	0	-	2	29%	6	**14%**
Single	3	60%	8	100%	6	75%	6	100%	10	100%	5	71%	38	**86%**
Total	**5**	**11%**	**8**	**18%**	**8**	**18%**	**6**	**14%**	**10**	**23%**	**7**	**16%**	**44**	**100%**
Gender														
Female	2	29%	2	25%	4	44%	3	50%	4	40%	3	43%	18	**38%**
Male	5	71%	6	75%	5	56%	3	50%	6	60%	4	57%	29	**62%**
Total	**7**	**15%**	**8**	**17%**	**9**	**19%**	**6**	**13%**	**10**	**21%**	**7**	**15%**	**47**	**100%**
GED Required	0	-	2	25%	9	100%	2	40%	0	-	0	-	13	**36%**
Sponsor														
CEIC	6	100%	3	50%	3	100%	1	50%	0	-	0	-	13	**77%**
Self	0	-	3	50%	0	-	1	50%	0	-	0	-	4	**23%**
Total	**6**	**35%**	**6**	**35%**	**3**	**18%**	**2**	**12%**	**0**	-	**0**	-	**17**	**100%**
Financial Support**														
Social Assistance	0	-	4	22%	8	44%	0	-	4	22%	2	11%	18	**25%**
Employment Earnings	6	25%	2	8%	7	29%	4	17%	1	4%	4	17%	24	**33%**
Family	0	-	5	23%	6	27%	4	18%	4	18%	3	14%	22	**31%**
UIC	3	50%	0	-	2	33%	0	-	0	-	1	17%	6	**8%**
Savings	0	-	0	-	1	50%	0	-	1	50%	0	-	2	**3%**
Total	**9**	**13%**	**11**	**15%**	**24**	**33%**	**8**	**11%**	**10**	**14%**	**10**	**14%**	**72**	**100%**

**Multiple responses were permitted on this question.

* CB = Cambridge Bay
CO = Coppermine
GH = Gjoa Haven
HI = Holman Island
PB = Pelly Bay
SP = Spence Bay

Table 1.4: Demographic characteristics of Kitikmeot* participants (averages): Year 1

Characteristic	CB		CO		GH		HI		PB		SB		Total	
	#	Avg.	#	Avg.	#	Avg.	#	Avg.	#	Avg.	#	Avg.	#	Avg.
Age	7	20.6	7	21.6	9	22.6	6	18.2	10	20.3	7	21.0	46	20.8
Number of dependents (A)	3	1.7	2	1.0	1	7.0	0	0	3	1.7	2	1.5	11	2.0
Weekly salary, previous year (B)	6	$405	6	$342	6	$278	5	$247	8	$370	6	$286	37	$326
Prior grade level completed	6	7.5	7	7.6	9	6.1	6	7.7	10	5.0	7	6.4	45	6.5
Year of last school attendance	7	1985	8	1983	9	1987	6	1985	10	1983	7	1982	47	1984
Weeks worked in previous year (C)	6	15.0	8	10.5	6	9.8	6	15.3	8	7.4	6	17.1	40	12.2

(A) Those with 1 or more dependents only.
(B) Those reporting a salary only.
(C) Those with a work history only.

* CB = Cambridge Bay
CO = Coppermine
GH = Gjoa Haven
HI = Holman Island
PB = Pelly Bay
SB = Spence Bay

Table 1.5: Keewatin and Kitikmeot regions compared on demographics (averages), Year 1

Characteristic	Keewatin #	Keewatin Avg.	Kitikmeot #	Kitikmeot Avg.
Age	147	23.8	46	20.8
Number of dependents	47	2.4	11	2.0
Weekly salary, previous year	85	$328	37	$326
Prior grade level completed	136	7.4	45	6.5
Year of last school attendance	149	1984	47	1984
Weeks worked in previous year	119	19	40	12.2

Table 1.6: Keewatin and Kitikmeot regions compared on demographics (frequencies), Year 1

Characteristic	Keewatin #	Keewatin %	Kitikmeot #	Kitikmeot %
Student Type				
Former	45	33%	7	16%
New	76	56%	11	25%
Ongoing	13	10%	26	59%
Marital Status				
Married	49	35%	6	14%
Single	93	65%	38	86%
Gender				
Female	65	45%	18	38%
Male	80	55%	29	62%
GED Required	22	29%	13	36%
Sponsor				
CEIC	59	77%	13	77%
Self	18	23%	4	23%
Financial Support				
Social Assistance	17	18%	18	25%
Employment Earnings	29	32%	24	33%
Family	33	36%	22	31%
UIC	9	10%	6	8%
Savings	4	4%	2	3%

Table 2.1: Average TABE results, Pretest, Keewatin Region*

	BL		CH		CI		EP		RI		WC		Total	
	Year 1 N=18	Year 2 N=35	Year 1 N=6	Year 2 N=5	Year 1 N=21	Year 2 N-26	Year 1 N=61	Year 2 N=84	Year 1 N=21	Year 2 N=25	Year 1 N=6	Year 2 N=7	Year 1 N=143	Year 2 N=182
Reading														
Vocabulary	8.4	6.4	6.0	6.2	5.9	4.1	5.7	5.6	7.4	6.5	5.4	5.1	6.1	5.9
Comprehension	8.4	6.9	6.3	6.7	6.5	5.1	5.8	5.8	6.8	6.9	5.9	5.2	6.5	6.2
Total Reading	8.4	6.6	6.0	6.4	6.3	4.6	5.7	5.6	6.6	6.7	5.7	5.3	6.3	6.0
Math														
Computation	7.1	6.8	7.3	6.3	6.5	5.0	5.8	6.0	6.8	6.6	5.8	6.3	6.4	6.3
Concepts	7.3	6.9	6.2	6.3	5.9	4.0	5.3	5.6	6.5	6.3	5.7	5.7	5.9	6.0
Total	7.2	6.7	6.7	6.3	6.2	4.7	5.7	5.8	6.7	6.4	5.8	6.3	6.2	6.1
Language														
Mechanics	8.5	7.5	7.5	6.5	6.9	6.2	6.3	6.4	6.3	6.9	6.5	5.8	6.8	6.7
Spelling	10.1	8.7	9.5	8.5	7.7	6.2	7.9	7.5	5.2	8.2	9.0	7.1	8.3	8.0
Grade Equivalent	8.0	6.9	7.2	6.3	6.4	4.5	5.8	5.8	6.4	6.7	7.3	5.5	6.5	6.1

*BL = Baker Lake
CH = Coral Harbour
CI = Chesterfield Inlet
EP = Eskimo Point
RI = Rankin Inlet
WC = Whale Cove
No data available from Repulse Bay

Table 2.2: TABE test increases from pretest to first posttest, Keewatin region

	BL		CH		CI		EP		RI		Total		Grade level range, first Posttest
	Year 1 N=12	Year 2 N=24	Year 1 N=6	Year 2 N=14	Year 1 N=5	Year 2 N=8	Year 1 N=31	Year 2 N=43	Year 1 N=16	Year 2 N=18	Year 1 N=75	Year 2 N=107	
Reading													
Vocabulary	.71	.53	.18	.32	.40	2.6	.12	.73	.56	.50	.35	.64	9.9
Comprehension	.46	.61	.25	.51	.76	2.6	.40	.96	.55	.11	.43	.85	10.3
Total Reading	.65	.51	.25	.41	.52	2.6	.29	.88	.68	.04	.43	.74	8.4
Math													
Computation	1.28	.36	.58	1.91	1.12	2.83	.57	1.02	1.21	.72	.85	1.06	9.6
Concepts	1.19	.67	.20	.56	.80	2.99	.79	1.00	.95	.85	.81	.97	10.1
Total Math	1.18	.49	.25	1.09	.96	2.95	.64	.94	1.07	.78	.79	.95	9.5
Language													
Mechanics	.96	.25	1.75	.70	.34	1.32	.45	.86	.60	.24	.69	.68	9.9
Spelling	-.19	.26	.13	.61	-.62	1.05	.06	.96	.69	-.44	.12	.49	9.9
Grade equivalent	.84	.39	.68	.88	.64	2.38	.38	.88	.92	.07	.63	.77	9.9
Grade equivalent difference, matched pre and posttest 1 only**		.39*		.82*		1.47*		.61		.59		.64	

*P (0.05

**Includes only students whose pretest and posttest scores could be compared (N=77).

Table 2.3: TABE test increases from pretest to second posttest, Keewatin region*

	BL		CI		EP		RI		Total		Grade level range, second Posttest
	Year 1 N=7	Year 2 N=13	Year 1 N=4	Year 2 N=9	Year 1 N=10	Year 2 N=12	Year 1 N=6	Year 2 N=9	Year 1 N=27	Year 2 N=45	
Reading											
Vocabulary	.34	1.03	.35	1.02	.69	.16	.27	.85	.44	.70	9.9
Comprehension	.43	1.12	2.05	3.67	.40	.13	1.60	.91	.88	.99	9.9
Total Reading	.53	.95	.78	2.17	.51	.15	.88	.89	.63	.76	9.9
Math											
Computation	1.66	1.18	2.68	4.07	.98	.75	.95	1.86	1.29	1.41	9.9
Concepts	1.51	.94	1.48	4.11	1.78	.73	.30	1.96	1.21	1.15	10.0
Total Math	1.29	1.17	2.20	4.14	1.40	.62	.48	2.10	1.20	1.31	9.9
Language											
Mechanics	.91	1.13	2.03	3.07	1.28	2.05	.98	1.11	1.21	1.51	9.8
Spelling	.29	1.52	-.35	2.75	1.14	1.35	.15	1.21	.35	1.04	9.9
Grade equivalent	1.04	1.06	1.48	3.52	.77	.87	.65	1.30	.92	1.22	7.7
Grade equivalent difference, matched pre and posttest scores only		.57		3.1		1.1		.61		.89	

*Listwise; that is, includes only students whose pretest and second posttest scores could be compared.

Grade range -0.6 to 3.1

Table 3.1: Employability Assessment Scale results, pretest (Year 1)

Item	Baker Lake (N=14)			Chesterfield Inlet (N=13)			Rankin Inlet (N=7)			Whale Cove (N=8)			Total (N=42)		
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
2. Language															
2.1 Reading	-	-	14	2	11	7	-	-	7	-	2	6	4%	27%	**69%**
2.2 Writing	-	11	3	3	16	1	-	2	5	1	5	2	8%	69%	**22%**
2.3 Speaking	-	3	11	3	17	-	-	-	7	1	-	7	8%	41%	**51%**
2.4 Spoken Instructions	-	4	10	3	12	5	-	-	7	-	2	6	6%	37%	**57%**
6. Motivation and Attitudes															
6.1 Able, willing, looking	-	10	3	2	2	9	-	4	2	1	2	3	10%	48%	**42%**
6.2 Confidence level	-	11	3	2	13	5	-	5	1	1	3	3	6%	68%	**26%**
6.3 Assistance/unemployed	-	1	-	14	1	3	-	1	6	-	-	-	54%	12%	**35%**
6.4 Defer job gratification	-	3	10	7	9	4	-	6	1	-	-	2	17%	43%	**41%**
6.5 Economic responsibility	-	5	9	11	6	3	1	4	2	-	-	1	29%	36%	**36%**
9. Child Care Needs	-	8	6	2	3	15	-	1	6	1	-	-	7%	29%	**64%**
10. Job Market Factors															
10.1 Opportunity awareness	-	12	2	6	11	3	-	5	2	1	1	3	15%	63%	**22%**
10.2 Obsolescence factor	-	13	1	-	3	1	-	5	2	-	-	2	-	78%	**22%**
10.3 Seasonal availability	-	13	1	4	1	4	-	3	4	-	-	2	12%	55%	**33%**
10.4 Wage requirements	-	-	14	10	4	1	-	6	1	-	-	2	26%	26%	**47%**
11. Miscellaneous criteria															
11.1 Appearance	-	4	10	2	4	14	-	2	5	1	1	6	6%	22%	**71%**
11.2 Housing	-	3	3	3	7	9	-	2	5	-	1	7	8%	33%	**60%**
11.3 Job hunting skills	8	4	2	6	12	2	-	7	-	-	4	1	30%	59%	**11%**
11.4 Supervisor relationship	1	10	3	8	5	7	-	7	-	-	-	1	21%	52%	**26%**
11.5 Social Skills	1	2	11	4	9	7	1	6	-	1	3	4	14%	41%	**45%**
11.6 Family support	-	1	-	2	3	7	-	-	1	-	-	-	14%	29%	**53%**
12. References															
12.1 Work habits, attendance	2	5	7	3	5	12	1	3	3	-	2	5	13%	31%	**56%**
12.2 Cleans work station	-	3	11	3	4	13	-	6	1	-	-	7	6%	27%	**67%**
12.3 Follows rules	1	1	12	2	6	12	1	-	6	-	1	6	8%	17%	**75%**
12.4 Responds to critcism	-	2	12	4	9	7	1	-	6	2	-	5	15%	23%	**63%**
12.5 Responds to instruction	-	-	-	1	5	7	-	-	1	-	-	-	7%	36%	**57%**
12.6 Cooperates	1	2	11	6	5	9	-	1	6	-	1	6	15%	19%	**67%**
12.7 Quality of work	-	6	8	-	3	4	-	5	2	-	3	4	-	49%	**51%**

Table 3.1 b;Employability Assessment Scale results, pretest

Item		Baker Lake (N=24)			Eskimo Point (N=39)			Rankin Inlet (N=21)			Whale Cove (N=3)			Pretest Total, Year 2 (N=77)			Pretest Total, Year 1 (N=42)	
		L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H
2.	Language																		
2.A	Reading	0	6	18	0	4	25	0	6	15	0	1	2	0%	22%	78%	4%	27%	69%
2.B	Writing	0	11	13	0	7	21	0	9	11	0	2	1	0	39	61	8	69	22
2.C	Speaking	0	2	22	0	3	26	0	7	14	0	0	3	0	16	84	8	41	51
2.D	Spoken Instructions	0	4	20	0	4	25	0	5	16	0	1	2	0	18	82	6	37	57
6.	Motivation and Attitudes																		
6.A	Able, willing, looking	1	12	10	1	1	21	0	1	17	1	0	2	5	21	74	10	48	42
6.B	Confidence level	4	13	7	1	4	24	0	3	16	1	1	1	8	28	64	6	68	26
6.C	Assistance/unemployed	7	6	3	3	1	4	2	0	11	0	1	1	31	21	49	54	12	35
6.D	Defer job gratification	1	13	10	0	2	20	0	2	18	0	1	2	1	26	73	17	43	41
6.E	Economic responsibility	5	4	11	0	2	21	2	2	17	0	2	0	11	15	74	29	36	36
9.	Child Care Needs	1	6	17	0	5	19	3	0	16	0	0	3	6	16	78	7	29	64
10.	Job Market Factors																		
10.A	Opportunity awareness	1	10	13	3	7	19	0	2	18	1	2	0	7	28	66	15	63	22
10.B	Obsolescence factor	0	23	0	1	8	6	0	4	8	0	1	2	2	68	30	-	78	22
10.C	Seasonal availability	1	21	1	0	8	7	0	6	6	0	1	2	2	68	30	12	55	33
10.D	Wage requirements	0	10	12	1	3	19	0	3	14	0	1	2	2	26	72	26	26	47
11.	Miscellaneous criteria																		
11.A	Appearance	0	3	21	0	0	29	0	6	14	0	1	2	0	13	87	6	22	71
11.B	Housing	0	0	23	0	3	25	3	1	7	0	0	3	5	6	89	8	33	60
11.C	Job hunting skills	3	15	6	3	6	20	1	6	14	1	2	0	10	38	52	30	59	11
11.D	Land skills	0	0	4	0	0	3	0	0	11	0	1	1	0	5	95			
11.E	Supervisor relationship	3	10	11	1	2	26	0	3	17	1	2	0	7	22	71	21	52	26
11.F	Social Skills	3	8	13	3	5	21	1	2	18	1	1	1	10	21	69	14	41	45
11.G	Family support	0	6	16	2	5	20	1	5	7	0	1	1	5	27	69	14	29	53
12.	References																		
12.A	Work habits, attendance	1	9	14	1	5	22	3	2	16	2	0	1	9	21	70	13	31	56
12.B	Cleans work station	1	13	10	0	3	26	0	2	19	0	1	2	1	25	74	6	27	67
12.C	Follows rules	1	2	21	0	2	27	0	1	20	0	2	1	1	9	90	8	17	75
12.D	Responds to critcism	2	15	7	0	1	28	1	5	13	0	0	2	4	28	68	15	23	63
12.E	Responds to instruction	0	8	16	0	6	23	0	1	20	0	1	1	0	21	79	7	36	57
12.F	Cooperates	0	4	20	0	1	28	0	1	20	0	0	2	0	8	92	15	19	67
12.G	Quality of work	0	20	4	0	6	23	0	2	19	1	2	0	1	39	60	-	49	51

T3.1b

Table 3.2: Employability Assessment Scale, posttest (Year 1)

	Baker Lake (N=8)			Rankin Inlet (N=8)			Chesterfield Inlet (N=7)			Eskimo Point (N=20)			Coral Harbor (N=22)			Whale Cove (N=5)			Total (N=70)		
Item	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	%	M	%
2. Language																					
2.1 Reading	-	1	7	-	-	8	1	4	2	1	5	14	-	11	11	-	1	4	3%	31%	66%
2.2 Writing	-	2	6	-	7	1	1	6	-	2	7	11	1	15	6	1	3	1	7%	57%	36%
2.3 Speaking	-	-	8	-	-	8	3	2	2	1	7	12	-	16	5	2	1	2	9%	38%	54%
2.4 Spoken Instructions	-	-	8	-	-	8	2	2	3	-	7	13	-	8	14	-	1	4	3%	26%	71%
6. Motivation and Attitudes																					
6.1 Able, willing, looking	1	4	3	-	6	2	-	1	5	1	6	12	3	1	15	1	2	2	9%	31%	60%
6.2 Confidence level	-	6	2	2	-	7	1	1	1	4	-	15	5	6	11	2	1	2	12%	53%	35%
6.3 Assistance/unemployed	-	-	2	2	3	3	1	-	-	-	-	2	16	2	4	-	1	-	56%	17%	28%
6.4 Defer job gratification	-	3	5	-	7	1	1	1	-	1	7	8	14	1	7	-	3	2	26%	34%	40%
6.5 Economic responsibility	-	3	5	-	1	7	-	-	1	1	7	9	7	5	9	3	1	1	18%	28%	53%
9. Child Care Needs	-	5	3	2	3	3	-	-	1	4	6	9	1	5	16	1	3	1	13%	35%	52%
10. Job Market Factors																					
10.1 Opportunity awareness	1	6	1	3	3	2	-	2	2	-	10	9	3	5	14	2	2	1	14%	42%	44%
10.2 Obsolescence factor	-	8	-	-	6	2	-	-	1	-	1	-	-	-	1	-	3	1	-	75%	25%
10.3 Seasonal availability	-	8	-	-	7	1	-	1	-	-	1	-	6	-	-	1	3	1	24%	69%	7%
10.4 Wage requirements	-	-	-	-	7	1	-	1	2	12	-	8	-	4	-	-	6	2	28%	42%	30%
11. Miscellaneous criteria																					
11.1 Appearance	1	1	6	-	2	6	-	1	6	-	4	16	-	4	18	1	1	3	3%	19%	79%
11.2 Housing	-	1	7	-	-	8	-	-	-	-	1	8	-	15	5	-	1	4	-	36%	64%
11.3 Job hunting skills	2	6	-	4	4	-	-	2	1	1	11	6	3	10	9	2	3	-	19%	56%	25%
11.4 Supervisor relationship	-	2	6	-	2	6	-	1	4	-	15	5	2	5	15	-	2	2	3%	40%	57%
11.5 Social skills	-	3	5	-	1	7	1	3	2	4	7	9	2	7	13	2	2	-	13%	34%	53%
11.6 Family support	-	2	6	-	-	-	-	-	-	3	-	8	6	1	15	-	-	-	22%	7%	71%
12. References																					
12.1 Work habits, attendance	-	3	5	-	2	6	-	2	5	1	6	13	2	4	16	1	2	2	6%	27%	67%
12.2 Cleans work station	-	4	4	-	-	8	1	5	1	-	-	9	1	8	13	-	1	4	3%	31%	66%
12.3 Follows rules	-	1	7	-	2	6	1	2	4	-	5	15	2	2	18	-	2	3	4%	20%	76%
12.4 Responds to criticism	-	1	7	2	-	6	2	-	5	1	2	15	6	-	16	-	4	1	16%	10%	74%
12.5 Responds to instruction	-	4	3	-	-	-	-	-	-	1	7	12	3	3	16	-	-	-	8%	29%	63%
12.6 Cooperates	-	1	7	-	1	7	-	1	6	-	4	16	1	3	18	-	2	3	2%	17%	81%
12.7 Quality of work	-	5	3	-	-	8	1	2	4	1	8	11	-	-	6	1	2	2	6%	32%	63%

Table 3.2B: Employability Assessment Scale, posttest (year 2)

	Baker Lake (N=17)			Rankin Inlet (N=9)			Coral Harbor (N=1)			Whale Cove (N=3)			Total (N=30)		
Item	L	M	H	L	M	H	L	M	H	L	M	H	%	M	%
2. Language															
2.A Reading	0	1	16	0	0	9	0	0	1	0	0	3	0%	3%	**97%**
2.B Writing	0	6	11	0	0	9	0	1	0	0	1	1	0	28	**72**
2.C Speaking	0	1	16	0	0	9	0	0	1	0	0	3	0	3	**97**
2.D Spoken Instructions	0	3	14	0	0	9	0	0	1	0	1	2	0	13	**87**
6. Motivation and Attitudes															
6.A Able, willing, looking	0	9	8	0	0	8	0	0	1	1	0	2	3	31	**66**
6.B Confidence level	0	10	7	0	1	8	0	0	1	0	1	2	0	40	**60**
6.C Assistance/unemployed	0	0	4	0	1	4	0	0	1	0	0	3	8	8	**92**
6.D Defer job gratification	0	7	9	0	0	9	0	0	1	0	1	2	0	28	**72**
6.E Economic responsibility	0	4	12	1	0	7	0	0	1	0	1	1	4	19	**78**
9. Child Care Needs	1	3	8	2	1	6	0	0	1	0	0	3	12	16	**72**
10. Job Market Factors															
10.A Opportunity awareness	0	4	13	0	0	9	0	0	1	1	1	1	3	17	**80**
10.B Obsolescence factor	1	7	4	0	1	8	0	0	1	0	0	2	4	33	**63**
10.C Seasonal availability	0	8	4	0	1	8	0	0	1	0	0	2	0	38	**62**
10.D Wage requirements	0	0	14	0	1	8	0	0	1	0	0	1	0	4	**96**
11. Miscellaneous criteria															
11.A Appearance	0	4	13	0	1	8	0	0	1	0	1	1	0	21	**79**
11.B Housing	0	1	5	2	0	7	0	0	1	0	0	3	11	5	**84**
11.C Job hunting skills	0	9	8	0	1	8	0	0	1	0	1	2	0	37	**63**
11.D Land skills	2	4	8	0	0	1	0	0	1	0	0	0	13	25	**62**
11.E Supervisor relationship	0	9	8	0	1	8	0	0	1	1	1	1	3	37	**60**
11.F Social skills	1	5	11	2	0	7	0	1	0	1	0	1	14	21	**65**
11.G Family support	2	3	10	0	0	9	0	0	1	0	0	3	7	11	**82**
12. References															
12.A Work habits, attendance	1	7	9	2	2	5	0	0	1	0	1	2	10	33	**57**
12.B Clean work station	0	6	10	0	2	7	0	0	1	0	1	2	0	31	**69**
12.C Follows rules	0	3	14	0	1	8	0	0	1	0	1	2	0	17	**83**
12.D Responds to criticism	2	6	9	2	0	7	0	0	1	1	0	2	17	20	**63**
12.E Responds to instruction	0	6	11	1	0	8	0	0	1	1	1	1	7	23	**70**
12.F Cooperates	0	2	14	1	0	8	0	0	1	1	0	2	7	7	**86**
12.G Quality of work	0	8	8	0	1	8	0	0	1	0	2	1	0	38	**62**

Table 3.3: Proportions of "high" ratings, Employability Assessment Scale (Year 1)

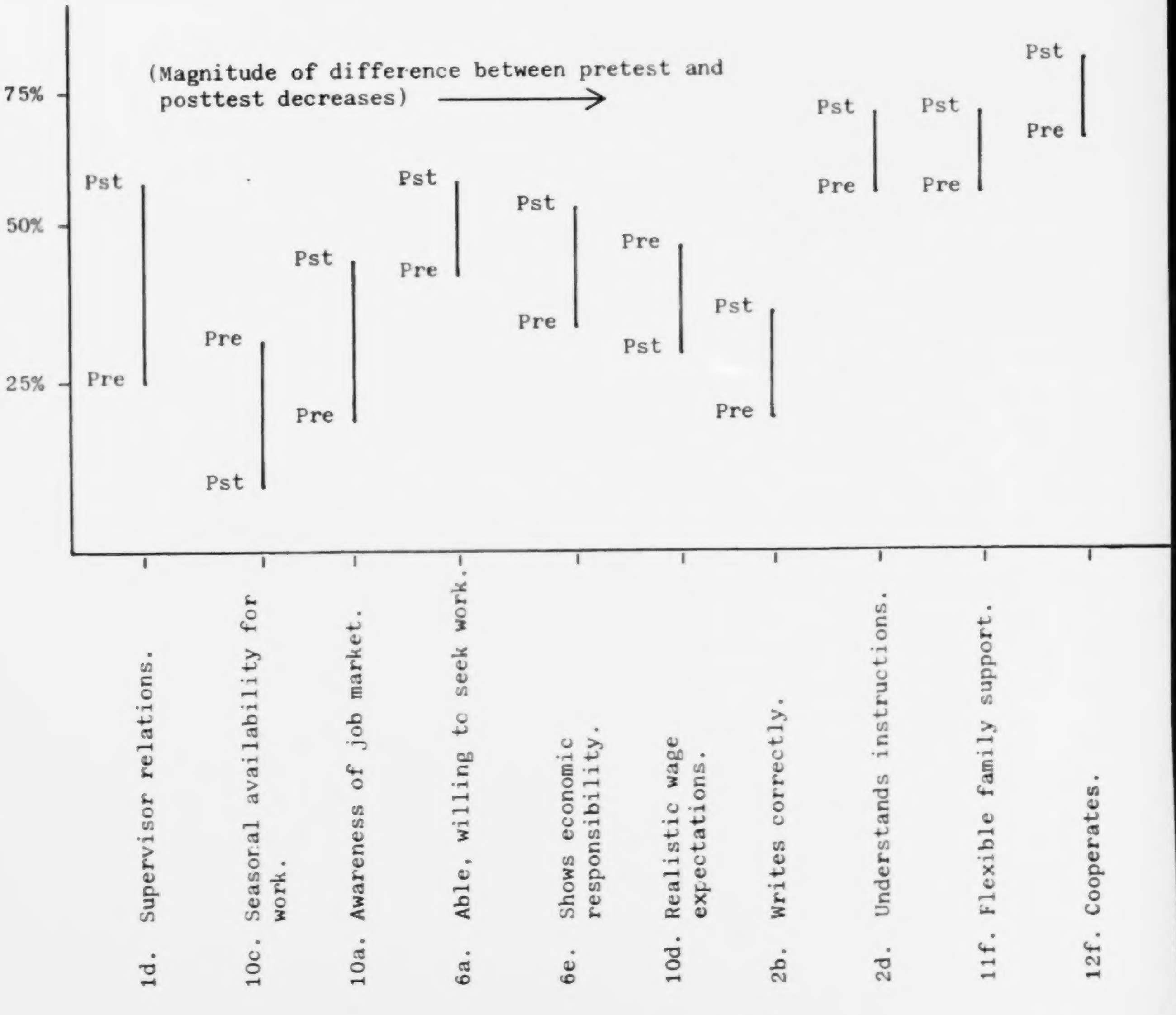

Table 3.3B: Proportions of "high" ratings, Employability Assessment Scale (Year 2)

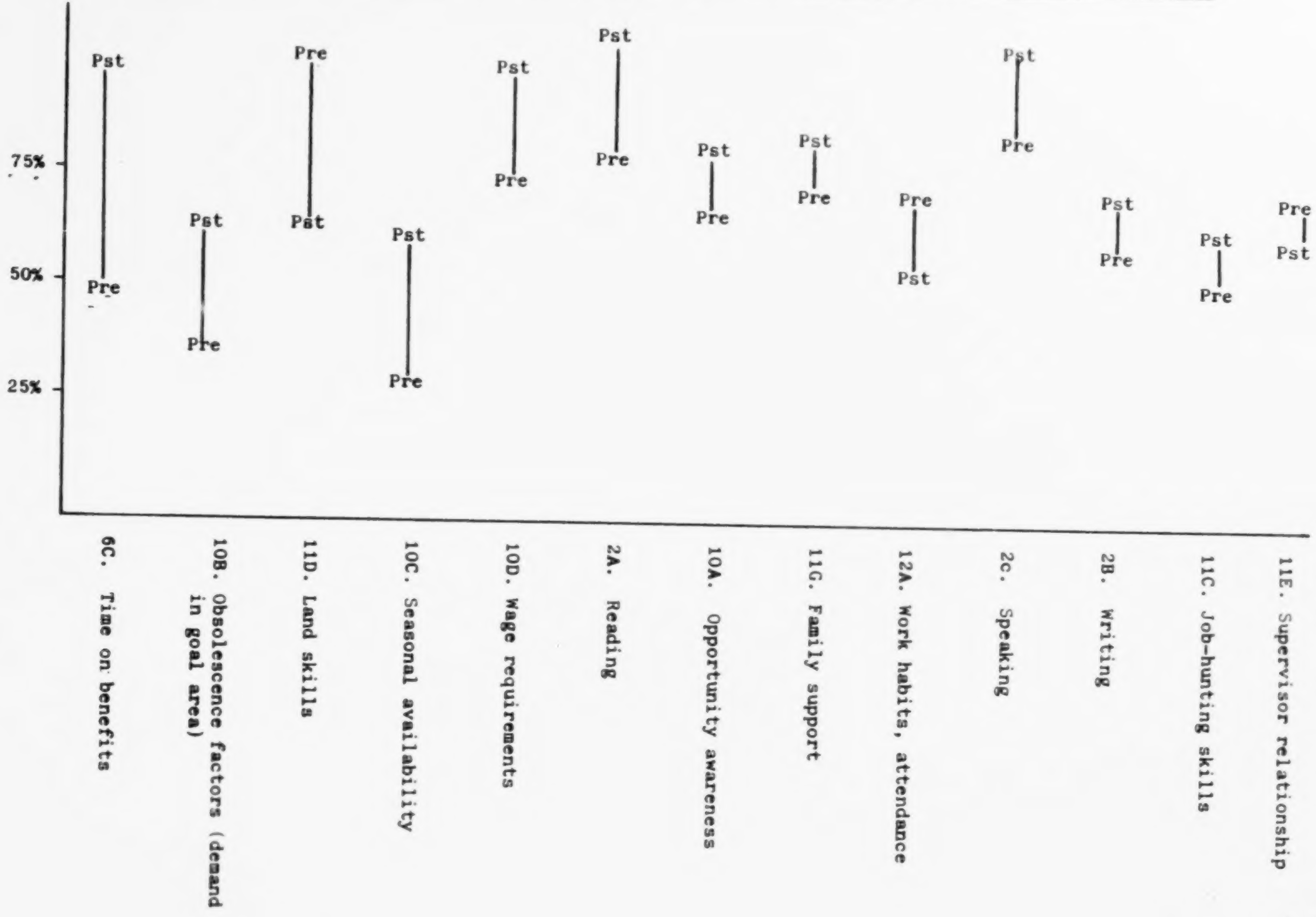

Table 5.1: Instructor Computer Attitude Scale items on which changes occurred, pretest to posttest.

Item	Pretest (N=11)			Posttest (N=10)		
	Agree	Disagree	DK	Agree	Disagree	DK
1. Using a computer makes students nervous.	1	1	4	0	10	0
5. Using a computer makes students feel isolated.	2	8	1	0	9	1
13. I do not expect my role as a teacher to change with CAL.	3	8	0	8	1	1
14. With CAL, I spend more time with individual students.	8	2	1	6	4	0
19. I am concerned about possible negative effects on my teaching from CAL.	1	6	4	4	5	1
25. I feel well-informed about CAL.	7	3	1	5	5	0
27. I worked harder than usual during the CAL project.	3	2	6	2	5	3
31. The need for CAL in my community has been proven.	3	4	4	4	2	4